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President's Message

Use of lead pipes and lead cooking vessels is given as one reason for the decline of ancient Rome. Ingestion of lead over time leads to brain and kidney damage, gastrointestinal symptoms, anemia, neurological symptoms, depressed sperm count and increased risk of preterm delivery, low birth weight and impaired mental development. The Romans were largely unaware of the insidious effects of lead in their food, wine and water.

The plant-based, lowfat, low-salt diet enshrined in the USDA dietary guidelines is contributing to chronic disease, digestive disorders, infertility and increasing developmental problems in our children; yet few are aware of the relationship between these dictates and the steady decline in our health. If followed, these guidelines are a lead pipe cinch for increasing infertility, fatigue, learning disorders and all manner of illness, which sap the lifeblood of our society and will result in its inevitable decline. And the 2010 USDA Dietary Guidelines Committee is determined that they will be followed, focusing its attention on behavior modification techniques to ensure compliance and stipulating adherence in schools, hospitals, prisons and other institutions. The Committee admits that most people don't adhere to their strictures, but prefers that we indulge in processed foods made with industrial fats, specifically warning against eggs, bacon and cheese.

We at WAPF have been following the actions of the Committee as it moves relentlessly towards new 2010 guidelines that are even stricter than earlier versions—specifically with lower recommended levels of saturated fat and salt, two nutrients that are key to brain function. We have submitted testimony, listened to webinars, attended hearings and issued press releases. In fact, it was only due to the efforts of our publicist, Kimberly Hartke, that there was any media representation at all at recent hearings. To read testimony from those who oppose the guidelines, visit Kimberly's blog at <http://hartkeisonline.com/usda-dietary-guidelines-controversy/>. WAPF is also developing a colorful poster and booklet describing the principles of healthy, nutrient-dense diets. Our alternative guidelines recommend four food groups: animal foods including dairy; grains, legumes and nuts; fruits and vegetables; and healthy fats. We'll keep you posted on our progress and announce these materials with appropriate publicity.

Meanwhile, the best way to learn about the latest in nutrition science and to enjoy delicious healthy food is to attend *Wise Traditions 2010*, our 11th annual conference. We urge you not to delay in pre-registering; ticket sales are running way ahead of last year and we'd hate to turn away any of our members for lack of space. We also expect to sell out of exhibitor space, so if you'd like to participate as an exhibitor, please don't procrastinate in signing up. For details on our speakers, see page 13, or visit www.westonaprice.org.

Letters

RAW MILK TO THE RESCUE

Two and a half years ago, I had no idea what I was in for. I was seven months pregnant with my first baby and we hadn't yet started our "real food" journey. We ate whatever sounded good to us, whenever we wanted it. That meant a lot of boxed meals, restaurant food and processed, pasteurized dairy, including ice cream and cheese. I loved cheese and couldn't imagine ever being able to go without it.

Fast forward about fifteen months and I had a thirteen-month-old daughter whom we discovered couldn't eat dairy. Her favorite type of cheese was mozzarella, the kind you buy in a bag labeled "low-moisture, part-skim." Unfortunately, it was also the type she reacted to the worst. After eating this cheese, she would have horrible diaper rashes, bad diarrhea, and eczema over her whole body, and she'd wake several times each night. As soon as we took cheese out of her diet, she did much better.

Soon after we discovered that my husband was sensitive to dairy, too. He would get sick every time he ate it. Then we discovered his father—who loves ice cream as much as I love cheese—was allergic, too. He initially refused to give up ice cream but eventually we all had to give it up, completely.

My son was born at home in July, 2009. We sent my parents out for fast food right after he was born. They returned with fake cheese and ice cream, which of course I ate. My son slept

through his very first night, then spit up when he woke, hours after nursing. Then I noticed patches of eczema on his arms. I was already on hyper-alert because of my daughter's dairy allergy, so I decided that I probably should cut back on the processed dairy.

However, I continued to eat some "dairy" foods — salad dressings, sheep's milk cheese, etc. I figured these were "safe" because they weren't ice cream, yogurt or other obvious dairy foods. But every time I would nurse my son, he



would scream and arch his back away from me and continue to scream for a couple of hours. Others would have simply said, "He's colicky," but I decided finally that I had to give up all dairy... for real.

Two weeks after I gave up dairy my son was a different baby. He was calm all the time, slept through the night, never screamed or arched his back during or after feedings. Our house became entirely dairy-free for seven months. Instead, we used a lot of coconut milk. We got very creative and were able to bake, make cream soups, ice cream and

other "dairy" foods using coconut milk.

It was in the middle of this dairy-free time that we learned about raw milk, and towards the end, I found a local source for it. We waited until my son was eight months old—we wanted his gut to be developed and healed before we tried to re-introduce dairy, and we actually even did the GAPS diet for a while. Then, we tried a little raw milk cheese first, and we held our breath....

No reaction! Not from any of us. Both children were fine. We had planned to wait awhile before trying unfermented dairy, but my husband was dying for some "real" ice cream, so we made some with raw milk and let the children eat it. Still no reaction!

We've been consuming raw dairy for about two months now. We found a farm about two hours away and we get raw milk about every two weeks. I make my own mozzarella now, so my daughter can have it again. She eats quite a lot of cheese every day, and yet she is fine! My son loves his ice cream and yogurt and thinks cheese is okay too. He suffered some eczema, too, as he was starting solids, but it has gotten better since he started having raw dairy.

The interesting thing is that now we can eat a small amount of pasteurized dairy and still be okay. Raw milk is excellent and has really helped our family. And my husband swears it makes the best ice cream ever!

Kate Tietje
modernalternativemama.com
Columbus, Ohio



Letters



MEDIA REACTION

I am a person who has been a healthy and happy customer of Minnesota's farm-fresh, organic and clean raw milk products for at least a decade and, in addition, I grew up with it. As such, I'm mystified and stunned by the knee-jerk reactions and hostility against raw milk in the media.

The recent *Minneapolis Tribune* editorial, "Recklessly ignoring raw milk's danger," came off as a critical scientific statement excoriating "internet idiots," know-nothings who wander like lost sheep into the clutches of bad farmers who want to poison them. According to the editorial, these easily bamboozled fools clearly need the government to "protect them." These writers talk about science but present not a shred of science in these attacks.

The typical raw dairy customer is vastly more knowledgeable than the average supermarket shopper. They are, for the most part well-read parents who duly note the well-documented facts regarding the declining safety and nutrient density of conventional food. They know that there is no such thing as a food that is one hundred percent safe. They know that if every category of food that ever caused an occasional incidence of food poisoning were made illegal, there would be no hamburger, no lettuce, no eggs, no cheese, no hot dogs, no spinach. Virtually nothing to eat! They also understand that improvements are always appreciated and necessary.

True "food bio-security" can only come from organic, sustainable family farms, never from imported food, never from a factory farm, never from

a huge corporation. The interpersonal connection of a group of consumers to a family farm builds trust and relationship. We want to shake the hand that feeds us. This way, if a health problem is suspected, at worst, only a few are exposed, and the problem can be stopped quickly, then corrected.

A year ago, one contaminated batch of commodity hamburger from a factory farm-sourced, mass-produced facility caused a recall of over one hundred twenty million pounds of potentially-dangerous hamburger! Tens of thousands of school children had already eaten most of it! The US Food Service had to deal with nearly four hundred food recalls last year alone!

There is a tremendous difference between milk produced for pasteurization and milk that is produced to be consumed raw. Since pasteurization has become law, the standards for bacteria, white blood cells and even coliform organisms have been seriously watered-down. Deadly pathogenic bacteria are not routinely found on small family farms using pasture-based farming. Milk is no longer touched by dirty hands but runs through glass and stainless steel pipes to the bulk tank. Deadly pathogens come from cities, off-farm workers, the use of feedlot-runoff irrigation water, and from confinement and unsanitary conditions. Pathogens take root when the animals are under-nourished, indoors, confined and over-worked.

Thousands of people who think they are "allergic" to milk or have "lactose intolerance" can almost always thrive on wholesome, pasture-based, organic raw milk! Their "allergy" or "intolerance"

is merely a perfectly normal immune reaction to "cooked" bacteria and pus, warped heated proteins, artificial hormones, traces of genetically modified grains, traces of mold from bad grain and feed-based antibiotic residues.

William G. Winter, DVM
Minneapolis, Minnesota

Will Winter is a retired holistic veterinarian a version of this letter is published by the Minneapolis Tribune in response to that newspaper's June 28, 2010 editorial, "Recklessly Ignoring Raw Milk's Danger—Ban on raw milk sales is needed to protect families." Will Winter will be a speaker at Wise Traditions 2010.

THE USDA LACKS CREDIBILITY

The new dietary guidelines represent the selected research and opinions of just thirteen individuals, some from academia and some from the USDA. The notion that these few people, who are unaccountable to the public, are going to decide how and what the entire country should be eating (especially at public schools) is really outrageous, given how politicized agencies and even academia are.

Too often, academics are judged not by their scholarship, intellectual rigor, or their abilities in the classroom, but by how much money they bring to the school or to their department, which can then have an influence on what they teach.

And the track record of the USDA is not one of impartiality. The USDA maintains that there is no difference in quality between conventional and



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organic foods—USDA extension workers are instructed to say that organic is merely a niche marketing tool denoting no inherent quality differences from conventional agriculture.

This claim could be true for people who don't care whether their food is laced with endocrine-disrupting chemicals such as atrazine, which is definitively linked to disfigured frogs; or who don't worry about the use of bovine growth hormone (BgH) in conventional dairy cows, which so overloads the cows their udders drag on the ground and the cows develop infections that lead to higher levels of antibiotic administration. Some mothers do not want their sons consuming dairy products with this artificially injected female hormone.

USDA should ensure that the information is there for those who want it. Instead of one-size-fits-all guidelines, the USDA should post all of the testimony and the accompanying research, and let people decide for themselves.

The USDA could simplify the information in the form of a chart that highlights the main components of each identified diet, summarizes the claimed effects from the diet (pro and con), and includes some of the supporting research. The agency could host a website that provides the public with a complete resource list for each diet.

Given the USDA's support for concentrated animal feeding operations (CAFOs) despite their unsanitary conditions and unhealthy animals, for irradiation to try to make these contaminated products safe to consume, for cloned products parading as food, and for telling the American people that

chemicals parading as food that is devoid of nutrients is "the safest food in the world," the agency lacks the track record and credibility to take it upon itself to impose or decide for anyone else what to eat. The USDA should only ensure that people have a manageable access to the information and be fully informed. But this will not happen unless enough people demand it. So that should be part of our strategy.

A Maryland legislative commission adopted this approach in a 1995 comparison of holistic medicine with allopathic medicine, based on documented reports in mainstream medical journals. The senator who chaired the commission told me how the conventional doctors on the commission were trying to gut efforts to include documented findings favoring holistic modalities. So she extended the commission for a third year and used that time to create a chart that speaks for itself: six disorders broken down into four categories with side-by-side comparisons of the two modalities regarding costs, side effects, efficacy and outcomes. In every category, the holistic treatment outperformed the allopathic option. By putting the findings in the form of a chart, the comparisons are clearly described, and the outcomes are readily apparent and undeniable.

Alyce Ortuzar
Well Mind Association
of Greater Washington
Ashton, Maryland

IDIOTIC GUIDELINES

I would be so happy if I never again had to hear a dietitian or a USDA-trained nutritionist tell a class of kindergarten-

ers to drink lowfat or skim milk, or tell a group of teenagers not to eat too much red meat but to choose lean chicken or turkey instead, or tell a pregnant woman with gestational diabetes to limit her egg yolks to one or two a week, or tell a diabetic that she can eat pancakes as long as she uses artificially-sweetened syrup and margarine, or tell me to get a ninety-pound eighty-five-year-old woman some lowfat cheese because the doctor has her on a lowfat, low-cholesterol diet.

These are things I have witnessed as a dietitian. All are the result of the idiotic Dietary Guidelines that has everyone in fear of saturated fat.

Pam Schoenfeld, RD
Mendham, New Jersey

FOOD NOT EDIBLE

I work as a dietitian in a large prison hospital. This is a hospital that cares for prisoners in the southeast who are too ill to live in the prison, mentally or physically.

I am not allowed to give the prisoners more food, even if they are extremely underweight or losing weight. If someone is losing too much weight, I am able to add some awful corn syrup-based "health shakes," that is all. The food is not edible. Most of it is processed, cold and very often premade and frozen.

Snacks twice a day include nutragrain bars, chips or snack crackers. A large food management company handles food service at many prisons, and is for profit.

Strangely, the hospital is never surveyed by Joint Commission or the Department of Health for quality of care as other acute care or long term care



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facilities are. The workers at the hospital pretty much do what they like, without much state or federal supervision.

Kim Rodriguez, RD, Chapter Leader
Aiken, South Carolina

RAW MILK TAMES HORSE ALLERGIES

I went to an allergist as a child then again at about twenty years old. The scratch tests showed a severe allergy to horse dander. The doctor said he'd never seen it so bad. The wheal, which is usually as large as a nickel, was in my case the size of a half dollar. I didn't need him to tell me I was allergic. Any exposure to horses resulted in more than twenty-four hours of sneezing, wheezing, itching and lethargy, even after taking a double dose of Benadryl.

About five years ago, I gave a farrier friend a ride home from the airport. Just having the essence of horse sitting next to me caused a massive reaction. I seriously considered going to the emergency room.

I have always been a huge milk drinker. As an adult I would consume six to eight glasses a day. About three years ago we started drinking raw milk. Although my children showed marked improvement from their eczema, I didn't really notice any health changes in myself.

This past week, I shot a scene from a movie about a girl and her horse. I spent seven hours in a barn, in direct contact with the horses and hay dust. A certain death sentence, I thought. But at the end of the day, I was completely symptom free. No itching, no wheezing, nothing. What is different from the last

time I was exposed? All I can think of is the milk. Thanks for working to make real milk available.

Jeff Babb
Wilmington, North Carolina

ROOT CANAL UPDATE

Dr. Hal Huggins was not only the first holistic dentist to expose and widely propagate the truth about mercury toxicity of amalgam fillings to the world, but he has also been at the forefront in exposing the neurological and immunological harm that root canal teeth cause in the body.

In the recent *Wise Traditions* (Summer 2010), Huggins confirms what the late great Patrick Störtebecker found in his Swedish research, namely that the free flow of bacteria (as well as mercury) to the brain and body from these chronic dental focal infections is a major contributor to the development of multiple sclerosis (MS), amyotrophic lateral sclerosis (ALS), and other neurological diseases. These findings are similar to those of Dr. Weston Price, Dr. W. D. Miller, Dr. E. C. Rosenow, and other early twentieth century focal infection (dental, tonsil, sinus, etc.) researchers. Dr. Hal Huggins is indeed a modern-day hero in biological dentistry.

I think it is important, however, to also remember what Dr. Price stated in a spirited debate at a 1925 meeting of the American Dental Association in Louisville, Kentucky: "... I must qualify the question as to the extraction of that [root canal] tooth by saying that a great deal depends on the danger of the overloads, the age of the patient and various contributing factors. But all pulpless

teeth, root filled or not, harbor so much danger of becoming infected that they should be extracted, though the time as to when they should be extracted will depend on several contributing factors. If the patient belongs to a family where there is a low defense for streptococcal infection, it had better be soon. . . . If the patient is in another group with a very high defense and not much in danger of overloads, and if it is a tooth that is greatly needed by that patient, I would advise you to do what I do: *retain some of those root filled teeth, because I believe they are of more value to the patient in the mouth than out*" (emphasis added).

In my practice I have found that Price's advice still remains true. For example, when patients have removed and detoxified their mercury amalgam fillings, use petrochemical-free personal care products, eat a nutrient-dense diet, and are on their constitutional remedy (according to the new Sankaran System), they are often able to retain one or more root canal teeth without detriment to their health.

Once again, the quintessential holistic dental physician, Dr. Weston A. Price, always weighed the state of the tooth against the health of the patient, and found that not all root canal teeth create problems: "It is not proven that it is absolutely necessary that teeth be perfectly sterilized or that they be perfectly root-filled in order that an individual may not develop systemic involvement, since *under favorable conditions the patient may provide an adequate defense or quarantine against these materials*" (emphasis added).



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Over the past couple of decades I have witnessed that many of my colleagues' well-meaning exuberance in helping their patients get well has often resulted in the extraction of all of their patients' root canal teeth. However, even when these teeth are appropriately cavi-
tated by a well-trained biological dentist, in too many cases I have not seen these patients' health significantly change.

Of course, it is a different matter when patients are suffering from ALS, MS, cancer or other degenerative disease. In these cases, the removal of these and other "obstacles to cure" is imperative in potentially healing these weakened and very ill patients. Thus, as soon as they are functioning well enough to excrete these bacterial poisons adequately (liver detoxification pathways, kidney clearance, etc.) to undergo appropriate cavitation surgery, this population of patients is referred to a holistic dentist or dental surgeon with appropriate pre- and post-op support. However, for those individuals who are not significantly ill, removal of a root canal tooth may not be necessary.

This decision, of course, should be made on a case-by-case basis, and the patient and the root canal teeth should be monitored over the years. If at any time symptoms and signs (including energetic testing) indicate that a root canal tooth is no longer dormant and quarantining toxins adequately, the tooth then needs to be sacrificed at that point for the health of the patient.

Louisa L. Williams, MS, DC, ND
San Rafael, California

Dr. Williams is the author of Radical Medicine and has been a popular speaker at Wise Traditions. Visit her website at www.marinnaturopathic-medicine.com.

EASY MONEY

"Easy money" was the nickname given to Erik by his babysitter. "Good disposition," said a friend of the family during his first year of life. Things changed after age eighteen months (about the time of his first immunization shot). What we thought was just the terrible twos was in fact the beginning of a five-year ordeal during which time our son developed such bad behavior tendencies as trying to jump off a balcony, jump out of a moving car, and threaten his mom with a kitchen knife—I still remember the look of a cold blooded killer in his eyes. He was five.

Finally, when he was suspended from kindergarten (the school would not let him return without a doctor's note) we took him to Children's Hospital where he stayed in the children's psychiatric unit for twelve days.

Erik was diagnosed with ADHD and a "mood disorder not otherwise specified." While in Children's Hospital the doctors first tried giving him the drug Concerta, which turned our bright child into a zombie. Adderall ended up being the "answer." He was admitted back into school with the prescription and an IEP (Individualized Education Plan). Although Erik did hold it together pretty well that following school year, the anger issues and mood swings were still a problem. I Googled "Alternatives to ADHD medication" and found a

wealth of information, none of it familiar to me.

We were referred by a friend to Kasha from Kennedy's Health Food Store in Falls Church, Virginia, where I met the most wonderful and knowledgeable owner. Not knowing her or the store, I walked in a total stranger, but when Kasha asked me why I was there, I told her my son had been diagnosed with ADHD. I still vividly remember her response: "Sit down."

After telling her the whole story, she immediately asked me about his diet. She told me to scrap any and all junk food ("there is no fruit in Fruit Roll-Ups!"), start him on supplements including cod liver oil and a children's probiotic. She also gave me the number of a nutritionist in California named Theresa Vernon, who wanted to set up a hair tissue mineral analysis (HTMA) for Erik.

Selling my wife on the option of alternative treatment was no easy chore, but after she spoke on the phone with Theresa for almost one hour, she emphatically said, "We're in!"

The HTMA results showed a high copper content for Erik. A vitamin-mineral routine was established as well as glutamine plus phenylalanine amino acid supplements first thing in the morning after which eggs were to be the mainstay for breakfast instead of cereal.

We noticed a difference the first day. Things just got better and better after that. We eliminated Gatorade (we felt the red #40 was contributing to his outbursts) and Fruit Roll-Ups (again, artificial colors). Cashews were given

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instead of chips for his salt cravings and real fruit for his sugar craving (after noon). The following summer we took him off Adderall and added the chiropractor-nutritionist team of doctors Pete and Lolin Hiltgartner of Leesburg, Virginia to his regimen.

Erik is now doing great in school and barely needs his IEP. He even joined Cub Scouts and stayed two years (he had previously never done anything organized for more than a few days).

My wife and I both feel the drugs given to Erik merely masked his symptoms and did nothing to correct what was ailing him. We cringe to think what would have happened if we had become complacent about his medication and had not followed the recommendations of the good people we were fortunate enough to have met on this journey.

Randy and Nancy Femrites
Leesburg, Virginia

on Dr. Price's central message.

This all starts with the soil and its inherent or enhanced fertility, especially as it pertains to the raising of food crops and livestock. As someone who has been supplying products and information for organic growers and studying organiculture for nearly forty years, I was hopeful that I might be permitted to join the discussion. It is mainly by means of healthy debate that we can achieve a synthesis and consensus on a subject badly encumbered by confus-



Northborne, in his 1940 book *Look to the Land*, who actually coined the term “organic” in relation to agriculture and not Jerome (J.I.) Rodale in the 1942 first publication of “Organic Farming and Gardening” magazine, as I supposed and as Rodale, no doubt, would have liked us to believe.

In the same spring issue of *Wise Traditions* (pages 12 and 13) is a letter by Allan Balliett, a biodynamic CSA farmer, providing another dimension in a very cogent and pertinent reference to the aspects of freshness, phytonutrients and nutrient-density of produce. In his letter, Balliett notes that the USDA organic program contains zero nutritional goals. Accordingly, a given sample of certified organic produce could be totally free of synthetic chemicals and contaminants, yet offer nothing in the way of nutrition, and still be fully in compliance with USDA regulations.

Given the situation, one has to ask, what is the value of safety if the food is of no value nutritionally? What is the value of the persuasive advice of authors of cookbooks and so many nutritionists to always use organic produce? It needs to be recognized that there is a historical reason that the irrelevance of nutrition needs to be laid at the feet of conventional organiculture.

Balliett speaks of bonafide CSAs as offering an assured supply of fresh, local, high-mineral, high phytonutrient produce and refers to small, local, ecologically managed farms employing “no toxic inputs plus ensuring soil nu-

WHAT IS ORGANIC AGRICULTURE?

I read with considerable interest Dr. Joseph Heckman's letter and the exchange among WAPF intelligentsia (Dr. Heckman, Dr. Thomas Cowan, and Sally Fallon Morell) over what (and what is not) organic agriculture (Spring 2010). This is a highly important conversation that needs to take place and a debate that needs amplifying, clarifying and, one hopes, settling. As with so many debates, misunderstandings arise from lack of definition of terms. Even so, I submit all three parties are missing the essential point, one that bears heavily

ing terminology and concepts leading to the misunderstanding exemplified in the writings of Dr. Cowan, to which Dr. Heckman takes strong exception. Such confusion and miscommunication abounds with respect to organic agriculture with serious consequences for everyone's health.

There already has existed much needless argument over the word “organic” in terms of its use in chemistry. In some respects, the choice of the term in relation to a system of agriculture was a poor choice. Dr. Heckman revealed an interesting point, that it was Walter



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trients balanced via Albrecht or similar systems” as providing the best quality food. Mark the words “plus,” “mineral” and “Albrecht.”

The problem is that many small “organic” farms don’t do this at all, and I would wager that most organic farmers (as well as gardeners) never heard of Albrecht and do not supply the necessary minerals called for in the Albrecht system of proper, full and balanced fertilization. Too many believe that “manure is the absolute basis for fertility.” This is a serious oversight, which Rodale helped to create. I call it the missing mineral message. If the necessary nutrient minerals are not present in the soil in full array, they won’t be in your food.

Organiculture, if it is to address the crucial nutrient-density issue, urgently needs to be expanded in concept and practice to encompass the Albrecht or similar system of assured mineralization, if we are to get the nutrient-dense, mineral augmented, organic produce of which Baillett speaks and WAPF principles call for. For that matter, Chapter 23 in Price’s classic work (1945 edition) was authored by Dr. Albrecht.

Dr. Heckman is an able historian of the organic movement and method, but you’ll notice in his lengthy letter, that while he mentions Albert Howard, Eve Balfour, Rodale and Edward Faulkner, he makes no mention of Albrecht or his works, and I submit this is a big hole in his awareness and research. Too many organic growers are fully equipped with ideological blinders and don’t need to know more than they already believe.

Albrecht is every bit the giant that

Price and Howard are. References to Albrecht can be found in *Nourishing Traditions* and my recommendation is that Dr. Heckman first make the acquaintance of Dr. Albrecht and then come back to the forum. A convenient place to start is with Albrecht’s small book titled *Soil Fertility and Animal Health*, now offered as Volume II of *The Albrecht Papers* by Acres USA. For another excellent overview source go to www.soilminerals.com.

While not strictly “organic,” Dr. Albrecht’s contribution to fertility management is a crucial adjunct to the complete picture, and that’s the point. Indeed, it is the crucial point. It must be brought in, or we need a new concept that embraces both inorganic minerals and organic matter as a complete and truly sustainable system of agriculture. One of the most prevalent misconceptions (and one Dr. Cowan seems to have) is that any form of agriculture, extending back into antiquity, which does not employ toxic chemicals is “organic” by default. Where do we get with that notion? Surely organiculture must represent more than abstinence from bad behavior. Let’s get past what we are against and delineate what we are for and hop to it.

Gary L. Kline
Olympia, Washington

As we explained in the Spring 2010 issue, Dr. Cowan was using the word “organic” in the sense of the watered-down USDA organic standards, which do not take into account the health of the soil. WAPF has consistently argued that we need to go beyond “organic.” Our

system of local chapters helps people find local farms that pay attention to soil mineral content and health. We have instructed our chapter leaders to precisely describe the practices of the farmers they list in their resource guides so as to avoid any confusion from words like “organic.”

USDA ORGANIC FROM CHINA?

According to a recent article in the *Wall Street Journal* (June 15, 2010), the USDA is banning an organic food inspection group from operating in China. I’m deeply alarmed at the USDA. Imported food from China or any other country shouldn’t be able to receive the organic seal on food brought into this country. I feel deceived that the USDA organic seal is being given to Chinese food producers. The Chinese government allowed their children to be poisoned by chemically treated milk.

How can American consumers prevent the corrupt USDA from allowing this organic seal on foreign food?

Robin M. Gray
Medina, Ohio

ORGANIC STANDARDS

I find much to agree with in Dr. Joseph Heckman’s letter addressing organic agriculture in the Spring 2010 *Wise Traditions*. Building on his excellent account of organic agriculture’s origins in the Winter 2006 issue, the letter highlights the important historical linkages between this movement and the concurrent campaign for whole, raw and unadulterated foods. I concur with Dr. Heckman’s characterization of the USDA National Organic Program



Letters



(NOP) as a credible and useful certification standard that provides consumers a minimal yet still meaningful degree of differentiation from non-organically produced foods. After ten years in existence, much of the promise of a federally-managed organic standard remains unfulfilled though there are significant indications that USDA is moving to honor its commitment. There are indeed times that when the people lead, the leaders will follow.

The only statement of Dr. Heckman's with which I disagree is his assertion that the term "sustainable agriculture" lacks definition, and can therefore be readily co-opted. No doubt that the concept of sustainability has become a popular smokescreen in recent times, but we have only ourselves to blame if we abandon "sustainable agriculture" as a meaningful yardstick in the broader discussion of where our food comes from and who provides it to us.

The term "sustainable agriculture" was defined in the 1985 Farm Bill and has served as the philosophical foundation of the USDA's Sustainable Agriculture Research and Education Program (SARE) for more than twenty years. The very modest funds appropriated for SARE over that period are, in my opinion, the wisest investment in family farming, low-input and diversified production systems, and direct marketing that the USDA has ever made. A visit to the SARE website at <http://www.sare.org/> will yield a wealth of print and video resources depicting precisely the type of agricultural systems that the organic pioneers such as Sir Albert Howard and J.I. Rodale endorsed.

To understand sustainable agriculture, it is important to view the concept as an approach and not an end in itself. Sustainable agriculture is a management system in which farmers identify and evaluate their environmental, economic and social resources on their operation. Most farmers are already sensitive to the environmental and economic circumstances on their operation and it is the third component—the connections to the local community, including the potential for direct marketing or other forms of value-added production—that makes the sustainable approach unique. Farming sustainably entails building synergies between these categories to improve the overall strength and viability of the operation over time. For example, moving ruminants out of confinement systems onto pasture can reduce costs (fewer veterinary bills), protect the environment (even distribution of manure to improve crop fertility) and produce a greatly value-added product (grass-fed dairy).

Consumers too can apply the three-fold economic, environmental and social criteria when weighing the pros and cons of the competing food choices available to them in the marketplace. I'd even go so far as to say that sustainable agriculture has a significant advantage over organic certification since many undeniably important production-related considerations including distance to market and labor conditions never have and likely never will be factored into the latter.

Mark Keating
Finchville, Kentucky

Mark Keating worked as the SARE State Program Assistant for Kentucky between 2006 and 2010. He currently works for the USDA National Organic Program where he also served between 1999 and 2002.

NOT CREAM AT ALL

I am particularly sad about the fate of the Canadian dairy company Lactancia. Our family bought their butter, cream, and other dairy products since I was a kid (over forty years ago). Today the main owner and distributor of Lactancia here in Quebec is Agropur, Canada's largest dairy cooperative. If anyone takes the time to read their cream cartons, you will see that what they contain is not cream at all; it is only about 10 percent cream and the rest is emulsifiers, poly this, poly that and seaweed.

I discovered this when the side panel on the "cream" carton caught my eye. "What ingredients?" I thought. There aren't any ingredients in cream.

And that's when I discovered the sneaky little linguistic trick they're using: The front label of dairy cartons shows a percentage—3 percent, 10 percent or 35 percent—which traditionally meant the fat content. But on the cream carton, that percentage means the percentage of cream, in this case 10 percent. Nowhere on the label does it say "cream substitute" or any such thing; it's just the usual label everyone has always seen.

I don't understand what's being done with all the cream if they are not putting it in the "cream." We periodically hear that to "keep milk prices up," milk is actually dumped and discarded,



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which boggles my mind in the first place, but why all these artificial milk products? It enrages me and I want to take some action. I'll definitely go see the local newspaper publisher, and besides complaining to the local politician, what do you suggest?

Vesna Talan
Stanstead, Quebec, Canada

The dairy industry makes more money on butterfat if they put it into ice cream rather than sell it as cream or butter; hence the degradation of cream and the push to reduced fat milks, even for school children. This industry knows that if you eat lowfat dairy throughout the day, you will binge and splurge on ice cream come evening. As to what to do, visits to politicians and letters to the newspapers can help educate people. People will slowly and gradually wake up to what is going on, thanks to the efforts of members like yourself.

INDUSTRIAL FOOD SICKNESS

Since my family has been eating exclusively whole, unprocessed foods

for over three years, I have noticed a strange occurrence. When my girls go to birthday parties or indulge in holiday festivities such as Halloween or Easter, they don't feel very well afterward. After eating the processed foods out of the industrial food system, the girls become nauseated and complain about stomach pain within a few hours.

My eldest daughter has vomited a number of times after these meals. My youngest daughter is very sensitive to something in these foods. More often than not, it causes behavioral problems for a day or two after eating the processed food.

My husband occasionally eats out at restaurants and complains about not feeling well after most meals. Even our cat, Tabs, who has been on a raw meat diet since we got her, has become sick from getting into a friend's processed cat food. As I observe their sickness, I notice it is like a mild flu that includes stomach upset or vomiting.

Now my family has not eaten unprocessed foods our whole lives. We used to eat processed foods every day

without feeling sick. (Okay, my family wasn't the picture of health, but we weren't vomiting after a meal either.) One would hope that eating nourishing traditional foods regularly would strengthen a person's constitution so that an occasional meal of highly processed foods would have no effect. But the reverse appears to be true. The longer my family eats nourishing traditional foods, the more sensitive we become to these processed foods.

Why are we now having industrial food sickness when in the past these same processed foods did not cause sickness? What has changed? I have been thinking about this question for quite some time. It is hypothesized that the healing action of the Specific Carbohydrate Diet changes the composition of gut flora or reverses gut dysbiosis. Gut dysbiosis is the lack of gut flora or an unhealthy gut flora imbalance which causes illness.

What if this progressive industrial food sickness is caused by changes in the gut flora community? Do the processed foods damage or kill healthy gut flora?

WAPF ON THE INTERNET

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WEBSITE: We are rebuilding westonaprice.org. Look for new social network pages soon.

BLOGS: Visit the timely blogs of Chris Masterjohn and Kaayla T. Daniel, PhD at www.westonaprice.org/blogs.html.

NEWS ITEMS: Interesting WAPF-oriented news items, blogs or websites can be submitted to Kimberly Hartke, WAPF Publicist, who coordinates our social media. If you think an item would be of interest to our facebook and twitter fans, email the link to press@westonaprice.org. Please mention that you are a member of WAPF when you do so. This way, you can become involved in helping us make our pages more valuable by suggesting items for us to post.



Letters



Does the gut flora “communicate” this damage to the “gut brain” causing the feeling of sickness? The gut brain is an extensive grouping of neurons in the digestive system, which gut flora attaches to and chemically communicates with the nervous system. What if the gut flora community is causing the feeling of being sick after my family eats the processed foods?

This would explain the progressive nature of industrial food sickness and why it seems to worsen the longer my family eats nourishing traditional foods. The longer my family eats better, the stronger the population of healthy gut flora becomes. As the healthy gut flora population increases, it can send a very strong message to the nervous system that the processed food is making the gut flora’s environment poisonous to them. The reason why the processed food did not cause illness before eating nourishing traditional foods is because of gut dysbiosis. There was not enough healthy gut flora to send a strong message of dismay to the nervous system about our food choices.

I notice that these days it is easier to get my children to eat better. Every round of industrial food sickness reinforces good eating patterns. The sad part is thinking of all the people walking around with very sick gut flora communities, too weak to send a danger warning. Most people are not aware that we are indeed “individuals” but our bodies are vast and complex microcosms of interrelating organisms. We are in peril if we forget that we interface with the environment on a microscopic level and our first line of defense is our symbiotic

gut flora community.

For more information about gut dysbiosis please read *Gut and Psychology Syndrome* and *GAPS in our Medical Knowledge*. For more information about the gut brain connection please read *Breaking the Vicious Cycle*.

Caroline Cooper, Chapter Leader
Kamloops, British Columbia, Canada

COD LIVER OIL EVERY DAY

I recently had a conversation with a lady who was in grade school in the 1950s, living in Norway. She told me they had to come to school every day with their spoon and were administered cod liver oil, as well as fresh milk and a large slice of rutabaga—perhaps the rutabaga was to clean their teeth.

Wouldn’t that be a good thing to start to in our schools—mandated cod liver oil! What a concept!

Ann Oldham Michael, DC
Chapter Leader
Coyhaique, Chile

GIGANTIC EXPERIMENT

I recently read *Nutrition and Physical Degeneration* by Weston Price and have to say that the book changed my life. As a chronic pain sufferer and hypochondriac for the last fifteen years, I have recently managed to relieve all of a long list of symptoms by simply not eating packaged grocery store foods.

For example, my resting heart rate has gone from ninety beats per minute to fifty in just a few weeks of eating whole food. This is especially stunning to me, since during the last fifteen years, no doctor or other health professional has

even suggested to me that food might be the cause of my troubles.

Dr. Price’s book is a powerful testament to the power of foods to do good or evil. The heartbreaking part is that grocery store foods amount to a gigantic experiment that we are performing on ourselves, and we are ignoring the results! Best wishes in your work!

Mark Williamsen
Milwaukee, Wisconsin


CHAPTER LEADERS ROCK!

I wanted to let y’all know that your local chapter in Little Rock rocks! A small group of farmers that I am privileged to sell with had some zoning issues with the city of Little Rock that shut down our farm-to-school market at Pulaski Academy in west Little Rock.

Lisa Lipe and other members of your local chapter helped communicate to the city how important it was to have access to locally grown produce.

In less than a week, the city of Little Rock demonstrated reason; after a review of their ordinances they found them to conflict with state laws. City officials have let us re-open our market temporarily while they sort things out.

I can’t speak for all my fellow farmers, but having access to that distribution point is a key part of my farm’s financial survival. The support demonstrated by your group here in Little Rock is appreciated beyond measure.

Kelly Carney
Jacksonville, Arkansas, 

Gifts and bequests to the
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to future generations.



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Natasha Campbell-McBride MD, author of *Gut and Psychology Syndrome*

Monica Corrado, holistic nutrition and food educator

Thomas Cowan, MD, author of *Fourfold Path to Healing*

Andrew Cutler, PhD, PE, author of *Amalgam Illness: Diagnosis and Treatment*

Kaayla Daniel, PhD, author of *The Whole Soy Story*

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Robert Disney, PhD environmental scientist

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Anne Fischer-Silva, founder and owner A New Leaf Nutrition

Cathy Garger, founding charter member Chesapeake Safe Energy Coalition

Nora Gedgaudas, author of *Primal Body-Primal Mind*

Nicholas Gonzalez, MD, author of *The Trophoblast and the Origins of Cancer*

Stephan Guyenet, PhD, health blogger at wholehealthsource.blogspot.com

James Hague, soil and animal health specialist

Magda Havas, PhD, expert on biological effects of environmental contaminants

Shannon Hayes, author of *Radical Homemakers*

Dean Howell, NC, expert on neuro-cranial restructuring

Anore Jones, author of *The Fish We Eat*

Janet Lang, DC, thyroid expert

Peter Langsjoen, MD, holistic cardiologist

Felix Liao, DDS, expert on root canal dangers

Chris Masterjohn, expert on fat-soluble vitamins

Mark McAfee, owner of Organic Pastures dairy in California

Judith McGeary, Esq, farmer and founder Farm and Ranch Freedom Alliance

Ken Morehead, DOM, holistic practitioner

Rami Nagel, expert on dental health, author of *Cure Tooth Decay*

Bruce Rind, MD, holistic medical doctor and authority on endocrinology

Joel Salatin, farmer and author of *Everything I Want to Do is Illegal*

Stephanie Seneff, PhD, authority on the effects of drugs on human health

Jeffrey Smith, bestselling author of *Seeds of Deception*

Kim Thompson, movement educator

Tim Wightman, president of Farm-to-Consumer Foundation

Will Winter, DVM, expert on sustainable agriculture and pastured livestock

Gary Zimmer, soil specialist

SEMINARS AND SESSIONS

The Gut and Psychology Syndrome

Environmental Toxins

Pasture-Based Farming

Homeopathy

Traditional Diets

Heart Disease

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Caustic Commentary

Sally Fallon Morell and Mary Enig take on the Diet Dictocrats

TARGETING CHILDREN

Not content with putting millions of adults on dangerous statin drugs, the pharmaceutical industry is targeting children with a chewable cholesterol-lowering product! Last month, Pfizer, Inc., announced that the European Commission had approved a chewable form of Lipitor for use in children over the age of ten. Pfizer's Lipitor is the best-selling medicine worldwide, with sales of \$11.4 million in 2009. But revenues are steadily dropping and Lipitor faces the loss of patent protection next year. So, of course, children are the natural targets for boosting lagging sales (*Bloomberg News*, July 7, 2010). Just to make sure that the new product has the widest possible market, a report published in the journal *Pediatrics*, calls for cholesterol screening of all children (*Pediatrics*, July 12, 2010). Shareholders must approve of this strategy, because Jeffrey Kindler, Pfizer chief executive, received a compensation package of \$13.7 million in 2009.

HAVE A STATIN WITH YOUR FAST FOOD MEAL

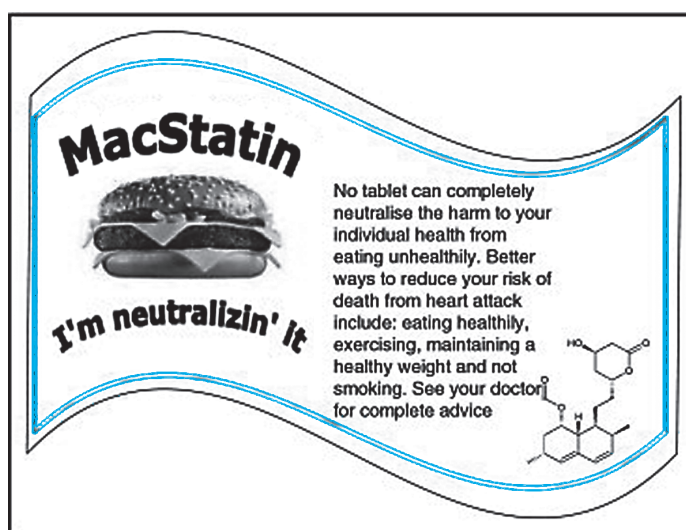
Another wacky proposal is to give out statins with fast food meals. In a stupendous example of junk science applied to junk food, researchers for the International Centre for Circulatory Health in London pooled data from seven questionable studies on heart disease and concluded that taking a statin with a seven-ounce Quarter PounderR with cheese and a small milkshake would neutralize the harmful effects of the fats in those meals. From the study abstract we read, "... statin therapy can neutralize the cardiovascular risk caused by harmful diet choices. . . Routine accessibility of statins in establishments providing unhealthy food might be a rational modern means to offset the cardiovascular risk. Fast food outlets already offer free condiments to supplement meals. A free statin-containing accompaniment would offer cardiovascular benefits, opposite to the effects of equally available salt, sugar, and high-fat condiments" (*American Journal of Cardiology* 2010;106:587-592).

IGNORING NEW EVIDENCE

New evidence exonerating saturated fats as a cause of heart disease continues to accumulate. We have already reported on a meta-analysis that looked at almost three hundred fifty thou-

sand subjects in twenty-one studies to assess the correlation between saturated fat consumption and cardiovascular disease. The conclusion: intake of saturated fat was not associated with an increased risk of heart disease or stroke (*American Journal of Clinical Nutrition*, January 13, 2010). Likewise, a prospective study from Australia, which looked at adults over a period of fifteen years, found that people who ate the most full-fat dairy products had a 69 percent lower risk of cardiovascular death than those who ate the least; or, to put it another way, people who mostly avoided dairy foods or consumed lowfat dairy had more than three times the risk of dying of coronary heart disease or stroke compared to people who ate the most full-fat dairy (*European Journal of Clinical Nutrition*, 7 April 2010). Now we have a study out of Japan, The Japan Collaborative Cohort Study for Evaluation of Cancer Risk, which found that saturated fat intake was inversely associated with mortality from stroke (*American Journal of Clinical Nutrition*, August 4, 2010). Another recent study found that a high-fat diet is just as effective as a high-carb diet for long-term weight loss, with better HDL-cholesterol (the so-called "good" cholesterol) levels among high-fat dieters (*Annals of Internal Medicine*, August 3, 2010 153:147-157).

And researchers at Louisiana State University found that eating eggs for breakfast resulted in greater weight loss and better energy levels than eating two bagels even though the number of calories was about the same (*The FASEB Journal* 2007;21:538.1). But is the USDA Dietary Guidelines Committee listening? No, the gang of thirteen food Puritans is completely ignoring anything that conflicts with their lowfat agenda, specifically warning against nutritious high-fat foods like cheese and eggs.



BETTER THAN BUTTER?

Consumer attitudes can make or break a product, even an industry. That's why the food industry keeps a sharp eye on what consumers are thinking, via surveys, polls and market testing techniques. The United Soybean Board has conducted a survey to assess consumer attitudes towards butter and margarine for the last seventeen years, until 2005 by telephone and since then online, with over one thousand consumers participating. The


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results of this year's survey were announced at the Institute for Food Technology's annual conference (sponsored by Kraft, Con Agra, Bunge, Tate & Lyle and numerous manufacturers of food ingredients), held in Chicago in July. This year about 48 percent of consumers said they consider butter to be healthier than margarine, because it is "more natural"—a result that must have the oil industry worried. However, when a margarine brand carries a health claim, 60 percent said they considered it healthier than butter. According to the United Soybean Board, this response indicates "an opportunity for margarine manufacturers to educate via product packaging." Watch for a big push for more health claims for margarine and spreads. The butter versus margarine contest is not one the industry wants to lose (www.dairyreporter.com, July 22, 2010).

BLAMING GERMS

Over sixty years ago, Weston Price demonstrated the effects of processed foods on our teeth, noting that the foods of commerce displaced nutrient-dense native foods that kept our teeth in a good state of health. Price showed that cavities, infection and other dental problems were a sign of malnutrition, a concept that found wide acceptance, as illustrated by an early New Zealand health department announcement (right). Today, however, nutrition has taken a back seat to the germ theory. Modern dentists believe that when you eat a meal, the bacteria that help to digest the food and sugar left on your teeth and gums produce lactic acid, which breaks down tooth enamel and leads to cavities. This explanation begs the question of why some people get cavities while others don't, since all of us have hundreds of species of bacteria in our mouths. *Streptococcus mutans* is considered the most cariogenic (promotes tooth decay) of these bacteria, and scientists are working on a genetically altered strain of *Strepto-*

coccus mutans that prevents the natural strain from colonizing on the teeth (About.com/biology, February 10, 2000). What this mutated bacteria will do to our gut flora is anybody's guess, but we're predicting it will do nothing to reduce tooth decay.



ISSUED BY THE  DEPT. OF HEALTH

THOSE TEETH DEMOLISHERS!

You've seen buildings being demolished and roads being torn up. Well, demolition is going on right in your own mouth. The demons of decay are at work.

Their work is made easier by our national habit of eating too many sweets, cakes, biscuits, and too much white bread.

Thus our teeth are undermined, and poor teeth lead to poor digestion, tired muscles and nerves, even tired heart and blood vessels.

Nature intended your teeth to last a lifetime. They will if your diet is made up of the right food. A balanced diet is still possible in wartime if you get these into your meals every day:

● MILK, VEGETABLES, WHOLEMEAL BREAD, FRUIT, and one or other from these: FISH, LIVER, KIDNEYS, CHEESE.

Don't forget your daily dose of cod-liver oil in winter—and plenty of sunshine in summer.

Clean your teeth after every meal if possible (eating an apple will do it) and visit your dentist twice a year.

**Eat less starches and sugars
and KEEP THOSE TEETH!**

FOR A HEALTHIER NATION

AN INCONVENIENT MUTATION

Despite over 50 years of population-wide vaccination, whooping cough incidence is on the rise. Although *Bordetella pertussis* is considered the main causative agent of whooping cough in humans, another infection agent, called *Bordetella parapertussis*, is becoming more common. The widely used acellular whooping cough vaccines (aP) are comprised solely of *B. pertussis* antigens, which are not effective against *B. parapertussis*. Moreover, new research shows that aP vaccination clears *B. pertussis* but results in an approximately forty-fold increase in *B. parapertussis* lung colony-forming units (CFUs). Furthermore, aP vaccination impedes host immunity against *B. parapertussis*—measured as reduced lung inflammatory and neutrophil responses, indicating that widespread aP vaccination can create hosts more susceptible to *B. parapertussis* infection (<http://rspb.royalsocietypublishing.org/content/277/1690/2017.abstract>). In other words, Mother Nature bats last.

AT A PHARMACY NEAR YOU

But vaccinations are enormously profitable, not only for the drug companies that make them but also for those who administer them. Vaccine margins are 30-50 percent, assuming that the stores aren't stuck with leftover vaccine, which can't be returned. During this weak economy,

when revenues from prescription sales have dropped, drugstores are pushing flu vaccinations earlier and harder than ever. CVS and Rite Aid have increased the number of pharmacists qualified to administer the shots, and are promoting them through

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TV commercials, in-store displays, Facebook and Twitter. Moreover, they are now offering flu shots before Labor Day, to catch the back-to-school crowd, rather than in October as in previous years. Overall, about 40 percent of the population older than six months received a seasonal flu vaccine last year, besting the previous high of 33 percent. The drugstore chains hope for even higher numbers with the new marketing strategy, betting that customers will stop in for a flu shot and also pick up some suntan lotion or school supplies (*Wall Street Journal*, August 17, 2010). Not mentioned in any of the glitzy promotional material for flu vaccines is the fact the every vaccine contains at least four neurotoxins: mercury, aluminum, formaldehyde and MSG. Those who get a flu vaccine five years in a row are ten times more likely to develop Alzheimer's disease (*Neurology* 2004; 63: 838-842).

CHINA STUDY REVISITED

Those of you who follow Chris Masterjohn's blog on our website

are familiar with the renewed debate on Colin Campbell's book, *The China Study*, sparked by the brilliant analysis of Denise Minger (http://rawfoodsos.files.wordpress.com/2010/08/minger_formal_response2.pdf). Minger she notes many flaws in the data and methodology Campbell uses to support his conclusion that plant-based diets are healthier than diets containing meat or dairy products. In his various responses to Minger's analysis, in which Campbell refers to Minger as a "young girl" and the Weston A. Price Foundation as an "agricultural lobbying organization" with "untold amounts of financial resources," he makes a very interesting statement: "I first inquired whether a collection of variables in the China survey. . . could consistently and internally support each of these biologically plausible models and, second, I determined whether the findings for each of these models were consistent with the overarching hypothesis that a whole food, plant-based diet promotes health" (http://rawfoodsos.files.wordpress.com/2010/08/minger_formal_response2.pdf). In other words, Campbell picked the data that supported

FDA TO REVIEW THE SAFETY OF MERCURY DENTAL AMALGAM

The US Food and Drug Administration (FDA) has agreed to review the safety of dental amalgam, which is 50 percent mercury, beginning with a public hearing on December 14 and 15. A final ruling is expected by mid 2011.

The FDA's controversial 2009 Final Rule upholding the safety of dental amalgam sparked a public outcry and prompted several groups—dental professionals as well as citizens—to file legal petitions for reconsideration with the FDA.

According to FDA watchdog Jim Dickinson of www.fdaweb.com, the FDA appears ready to reverse itself this time. "They're laying the groundwork to make a reversal appear legally consistent," he said, referring to FDA's interest in considering information previously overlooked as well as a 2009 report on risk assessment by the National Academy of Sciences. "It appears the agency is aware that it's on the losing side, and as the scientific evidence grows, it's time to move."

On the other hand, "FDA hopes to defer to its dental products advisory panel, thus much depends on who gets named to the panel and whether they're up to the job," warned Jim Love, attorney for the International Academy of Oral Medicine and Toxicology (IAOMT), an anti-mercury dental association sponsoring two of the four legal petitions.

Enough evidence exists to allow the FDA to ban amalgam, as Norway and Sweden have done. However, the FDA's ruling on the petitions is unlikely to be an outright ban, since agencies don't reverse themselves abruptly. The ruling may be a tiered approach involving some combination of warning, informed consent and ban, depending on patient risk group. Or, it could be a reclassification of amalgam, requiring additional scrutiny, which could eventually lead to a ban.

WHAT YOU CAN DO:

Send a comment to the FDA ("docket number FDA-2010-N-0268") via the Internet, www.regulations.gov, or by mail: Division of Dockets Management, Food and Drug Administration, 5630 Fishers Lane, Room 1061, Rockville, MD 20852.

Points to include: Mercury is a neurotoxin, an oxidative catalyst and an enzyme disruptor. Mercury has been implicated in many diseases including Alzheimer's, multiple sclerosis and autism. Chronic, low-dose poisons like mercury may be difficult to study, but that doesn't make them safe. Since mercury is stored preferentially in the brain, total body burden cannot be measured except on autopsy. Mercury susceptibility appears to have a genetic component. Dental patients should be informed of the materials being implanted in their teeth. The decision on how much risk is acceptable can only be made by the patient, not the dentist.

Finally, report any adverse effects to the FDA if your health problems are attributable to dental amalgam: <http://www.fda.gov/Safety/MedWatch/HowToReport/default.htm>.

Caustic Commentary

his theory, rather than objectively analyzing the China survey and the scientific literature. He seems particularly averse to offending his fellow Whole Foods consultants Joel Fuhrman, Rip Esselstyn and John McDougal. Says Campbell: “No diet or any other medical strategy comes close to the benefits that can be achieved with a whole foods, plant based diet.”

BREAKTHROUGH FROM AMERICAN FAMILY PHYSICIANS

Yes, the organization called American Family Physicians has finally figured out what kinds of fats we should eat! Here we go—we are sure you have never heard such advice before. What a wonderful way to keep our physicians happy and prosperous! Note carefully the mixture of good advice with bad, the better to deceive the hapless consumer.

- Avoid fast foods that contain unhealthy *trans* fats.
- Don’t eat too much red meat. Instead, opt for leaner sources of protein such as fish, poultry and vegetables.
- Bake with canola oil, and cook and season with olive oil. Use olive oil to top a salad or in place of butter on bread.
- Avoid too many potato chips in favor of soy or peanuts without salt.
- Top a salad with avocado, nuts or garbanzo beans.
- In place of butter, opt for margarine that’s liquid or in a soft tub container. Choose margarine that is low in saturated fat and doesn’t contain *trans* fat.

WHERE’S THE BEEF?

What happens when our food is prepared by food engineers rather than cooks? We get “vegetarian protein options” made from soy. Soy protein-based meat analogs are showing up in the deli cases of stores like Whole Foods. The industry claims that “palatability has been improved with a high-moisture extrusion process.” Fu-Hung Hsieh, professor of biological engineering and food science at the University of Missouri, has been working for a number of years to produce a soy product that simulates the fibrous qualities of a chicken breast, rather than one that simply adds flavor and color to soy protein. And efforts are underway to turn peas, wheat, potatoes, sweet potatoes and algae into meat-like substances that can be promoted as “healthy” alternatives to meat and dairy (foodnavigator-usa.com, August 17, 2010).

NEW APPRECIATION FOR RAW MILK

Breast milk and the milk of other mammals contain a large fraction of indigestible sugars consisting of a lactose molecule onto which chains of other sugar units have been added. Humans lack the enzymes to break down these sugars, but they serve as the perfect foods for the bifido subspecies of bacteria, allowing this beneficial bug to thrive in the digestive tract of

raw milk consumers. Researchers at the University of California Davis have found that in addition to promoting the growth of beneficial bacteria, these complex sugars serve as decoys for noxious bacteria. The sugars are very similar to those found on the surface of human cells, and are constructed in the breast by the same enzymes. Many toxic bacteria and viruses bind to human cells by docking with the surface sugars. The team has also found that the proteins in raw milk have special roles, one of which, called alpha-lactalbumin, can attack tumor cells and those infected by viruses by restoring their lost ability to commit cell suicide (*New York Times*, August 2, 2010). Spurred by these findings, the researchers urge all mothers to breast feed, but they stop short of the other obvious conclusion: the next-best thing to breast milk is raw milk from other species, not only for infants but for growing children and adults.

SILVER LINING

Insured Americans are using fewer medical services. Insurers, lab-testing companies, hospitals and doctor-billing companies report that patient visits, drug prescriptions and procedures are down in the second quarter from year-ago levels. Blaming a weak economy, health care officials have noted that “People just aren’t using health care like they have. Utilization is lower than we expected, and it’s unusual.” They are predicting that utilization of health care services will rise again as “Americans exhaust their deductibles and insurers start paying for services” (*Wall Street Journal*, July 29, 2010). Might there be another reason for the decline in operations and doctor visits? As a silver lining to the economic turndown, perhaps Americans are thinking more carefully about their health, and turning to diet and alternative treatment rather than expensive conventional care. ☯

FOR SCIENTISTS AND LAY READERS

Please note that the mission of the Weston A. Price Foundation is to provide important information about diet and health to both scientists and the lay public. For this reason, some of the articles in *Wise Traditions* are necessarily technical. It is very important for us to describe the science that supports the legitimacy of our dietary principles. In articles aimed at scientists and practitioners, we provide a summary of the main points and also put the most technical information in sidebars. These articles are balanced by others that provide practical advice to our lay readers.

Precious Yet Perilous

Understanding the Essential Fatty Acids

By Chris Masterjohn

George and Mildred Burr traversed the long roads leading from California to Minnesota in a Model T Ford Roadster in 1928, smuggling their two cages of Long-Evans rats into hotel rooms under overcoats to keep them safe from the fierce chill of the autumn nights. The recently married couple was about to revolutionize the world of nutrition by showing the essentiality of certain highly unsaturated dietary fats, and within two years would coin the term “essential fatty acids.”¹

Over the ensuing decades, the consumption of vegetable oils rich in these fats more than doubled in the United States.² The American Heart Association began recommending their use to lower cholesterol levels in 1961,³ and despite the Great Doubling that occurred during the Oiling of America, it recently recommended we nearly double our intakes yet again.⁴ Scientific research over the past several decades, however, has suggested that high intakes of these fats or imbalances between different classes of fatty acids may actually contribute to the risk of modern, degenerative disease. Just how essential, then, are the essential fatty acids? Are they double-edged swords? To begin putting the pieces of this puzzle together, let us return to the Burrs’ expedition to the cold, northern border where their rats would provide the first evidence of the essentiality of certain dietary fats.

THE DISCOVERY OF THE ESSENTIAL FATTY ACIDS

George Burr had conducted his doctoral research in the deserts of Arizona and Utah, studying the effects of soil chemistry and climate on the distribution of plants and the quality of their sap. In September of 1924, having just finished this work, he left for the University of California, Berkeley, to study vitamin E with Herbert Evans, who had recently discovered the vitamin with Katherine Scott Bishop. The trip was serendipitous. Within a year, Burr married Mildred Lawson, the stock-keeper of Evans' rats. Bishop and Evans were having trouble reproducing their vitamin E-deficient diet, and Burr helped them develop a highly purified diet using casein and sucrose. This diet, however, produced a deficiency that vitamin E could not cure. Evans thought they discovered a new vitamin, but Burr thought they discovered the essentiality of certain fats. In 1928, Burr left Berkeley for the University of Minnesota, where he was invited to continue his nutrition research as a professor of plant physiology. He left having discovered nothing of great importance about vitamin E, but having gained a life partner and having fortuitously stumbled upon a new deficiency disease to research.¹

The possibility that certain dietary fats might be essential contradicted the conventional wisdom

of the day. Since the discovery in 1845 that pigs are capable of synthesizing fat from carbohydrate, researchers believed that neither fats nor the fatty acids of which they are composed were essential nutrients.⁵ By the 1920s, most researchers believed that the only function of fats was to store excess energy and to carry fat-soluble vitamins. In 1920, Osborne and Mendel showed that rats consuming a diet containing only 0.3 percent fat consumed more food and grew more vigorously than rats on a standard diet and concluded that "if true fats are essential for nutrition during growth the minimum necessary must be exceedingly small."⁶ The diets were made of meat residue and purified starch and contained brewer's yeast and alfalfa as sources of vitamins. Now that we are in the midst of an obesity epidemic, we may look back on this paper and suggest that it showed an advantage of including some fat in the diet in order to properly regulate appetite. Its significance at the time, however, was to show that fat-soluble vitamins are required for growth but that fat itself is not.

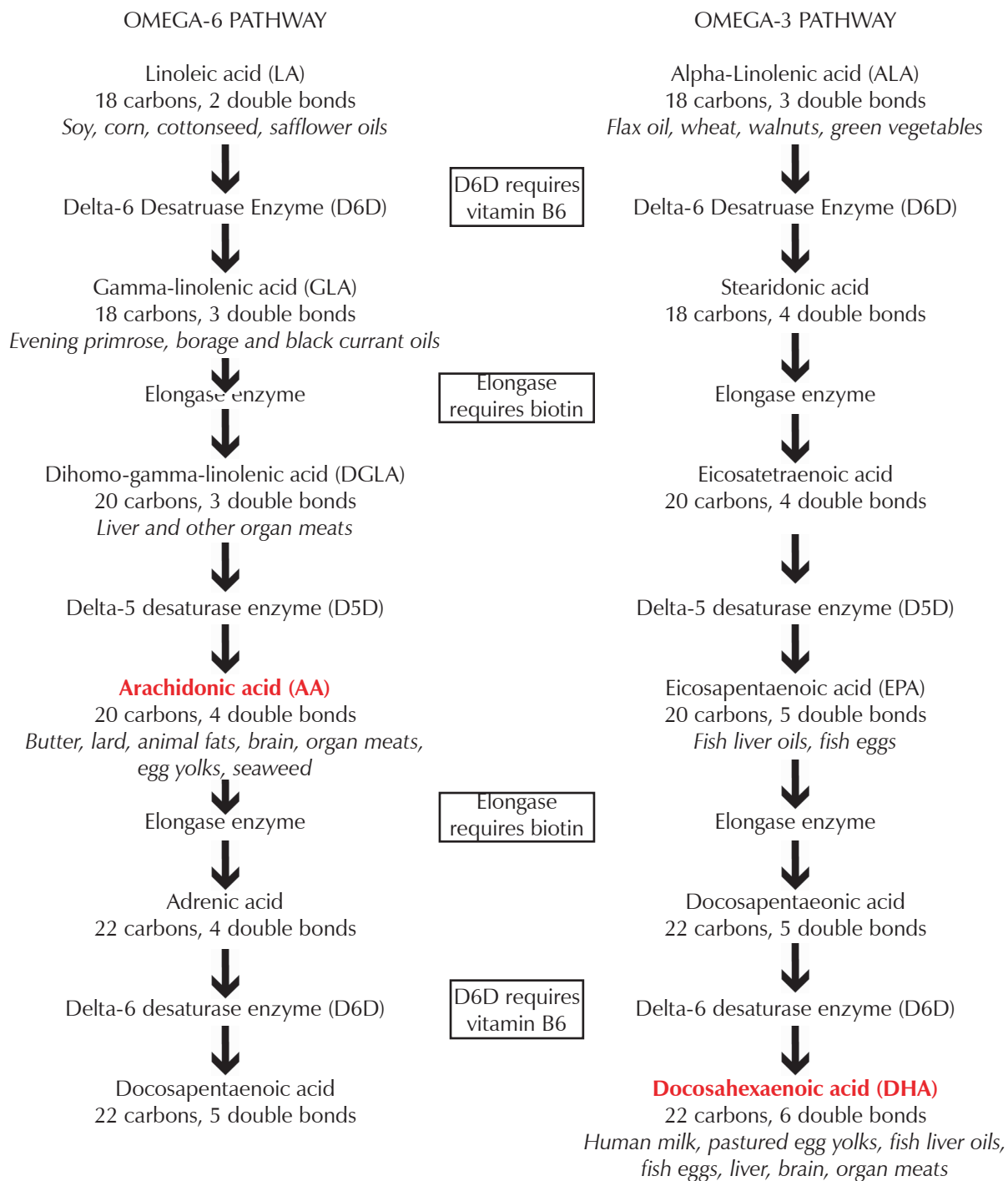
The diet the Burrs used to produce essential fatty acid deficiency was very different from the diet Osborne and Mendel used. The Burrs purified casein through repeated rounds of precipitation and purified sugar through repeated rounds of crystallization. They used yeast to supply B vitamins, a

By the 1920s, most researchers believed that the only function of fats was to store excess energy and to carry fat-soluble vitamins.

SUMMARY: UNDERSTANDING THE ESSENTIAL FATTY ACIDS

- The primary essential fatty acids are the omega-6 arachidonic acid and the omega-3 DHA.
- Arachidonic acid is found in liver, egg yolks, and other fats from land animals, and in small amounts in seafood. DHA is found in cod liver oil, fatty fish, and in smaller amounts in the organs and fats of land animals.
- Symptoms of arachidonic acid deficiency include dry, scaly and itchy skin, hair loss, dandruff, reproductive difficulties, gastrointestinal disturbances, and food intolerances. Symptoms of DHA deficiency include numbness, tingling, weakness, pain, psychological disturbances, poor cognitive function, difficulty learning, and poor visual acuity. Deficiencies of both fatty acids contribute to poor growth, poor immunity, and inflammation.
- The requirement for essential fatty acids is likely to be well below 0.1 percent of calories on a diet that is devoid of refined sugar and rancid vegetable oils, low in polyunsaturated vegetable oils, adequate in protein and total energy, and rich in vitamin B₆, biotin, calcium, magnesium, and fresh, whole foods abundant in natural antioxidants.
- The requirement for essential fatty acids is lowest in healthy adults and highest in infants and growing children, pregnant and lactating women, bodybuilders, people recovering from injury, and people with chronic disease. Alcoholism, diabetes, insulin resistance, certain genetic variations, and strict vegetarianism may make someone more likely to become deficient. Additional liver, egg yolks, and cod liver oil can be used to correct deficiencies.
- Excess linoleic acid from vegetable oils can cause a deficiency in DHA. An excess of the omega-3 fatty acid EPA from fish and cod liver oil can cause a deficiency in arachidonic acid. For this reason, cod liver oil should be used in moderation and in combination with a diet rich in egg yolks and organ meats.
- Essential fatty acids are vulnerable to a process called oxidation, which can cause cellular damage.
- Replacing traditional animal fats with polyunsaturated vegetable oils may increase the risk of heart disease, cancer and total mortality.
- One gram per day of omega-3 fatty acids from fish oil reduces cardiovascular mortality in patients with chronic heart failure or who have recently had a heart attack. However, fish oil may increase cardiovascular and total mortality, especially when used for more than four years in combination with a standard modern diet.
- The liberal use of organ meats and egg yolks combined with small amounts of cod liver oil renders the essential fatty acids safe and health-promoting.

THE OMEGA-6 AND OMEGA-3 PATHWAYS



There are two major types of polyunsaturated fatty acids, those of the omega-6 family and those of the omega-3 family. In the body, the eighteen-carbon omega-6 fatty acid linoleic acid (LA) is elongated and made more unsaturated by enzymes. The key elongated omega-6 fatty acid is arachidonic acid (AA), with twenty carbons and four double bonds; likewise the eighteen-carbon omega-3 fatty acid, alpha-linolenic acid (ALA) is elongated and made more unsaturated by enzymes. The key elongated omega-3 fatty acid is docosahexaenoic acid (DHA). We can also obtain these critical fatty acids from certain foods, many of which were considered sacred foods by traditional cultures. Too much LA, ALA and EPA (twenty-carbon omega-3 eicosapentaenoic acid) can interfere with the body's production and utilization of AA and DHA.

Source: Mary G. Enig, PhD, adapted from RR Brenner, PhD, *The Role of Fats in Human Nutrition* 1989.

fat-free extract of cod liver oil to supply vitamins A and D, and in some experiments they used a fat-free extract of wheat germ to supply vitamin E. When they fed this diet to young, growing rats, the rats developed irritated, sore and scaly skin, dandruff, and hair loss. Their tails were inflamed, swollen, scaled and rigid, and were hemorrhaging in certain spots (Figure 1). Their kidneys degenerated and blood appeared in their urine. The females stopped ovulating and became infertile. Rats of both sexes drank massive amounts of water, yet did not urinate any more than the control rats, suggesting the water simply evaporated right out of their skin. Despite eating much more food, they gained much less weight; after several months they began to lose weight and within six months to a year they all had died.⁷⁻⁸

None of the vitamins cured the disease. Coconut oil, whether fully hydrogenated or not, could not cure the disease, and the curative effect of butter was very weak. The fatty acid fraction of cod liver oil helped lessen the symptoms and prevented the early death, while lard, liver, corn oil, flax oil and olive oil fully cured the disease. All of the effective oils had one thing in common: the presence of either linoleic acid or arachidonic acid, both of which are omega-6 polyunsaturated fatty acids (PUFAs).⁷⁻⁸ Later experiments showed that butter, which contains small amounts of both fatty acids, could fully cure the disease if provided in large enough amounts.⁹ Purified linoleic or arachidonic acids were each capable of fully curing the deficiency when provided alone.¹⁰ Arachidonic acid was at least three times more effective than linoleic acid, and probably would have proven to be even more effective had lower doses been used. Since our bodies use linoleic acid to synthesize

arachidonic acid but do not use arachidonic acid to synthesize linoleic acid, this effectively demonstrated that only arachidonic acid is needed to cure the deficiency.

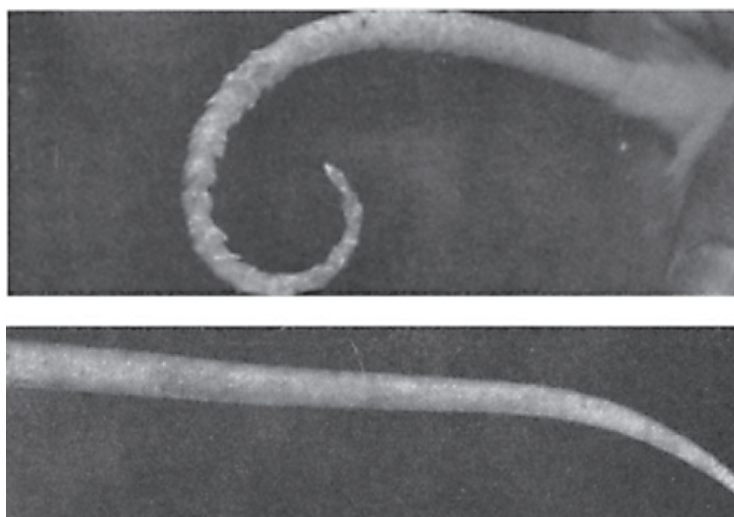
In the 1970s, researchers cured the dermatitis associated with essential fatty acid deficiency by topically applying prostaglandin E₂ (PGE₂) to the skin of deficient rats.¹¹ PGE₂ is a short-lived signaling compound that our bodies synthesize from arachidonic acid. It stimulates the formation of gap junctions¹²⁻¹³ and tight junctions,¹⁴ which are protein-based connections between cells whose vast array of functions includes regulating the permeability of the skin barrier.¹⁵⁻¹⁶ The skin of essential fatty acid-deficient rats not only evaporated copious amounts of water but also became permeable to lethal chemicals like barium sulfide, to which the skin is normally impermeable.¹⁷ Rats with genetic defects in gap junction formation develop scaly skin, increased permeability of the skin barrier, defective ovulation and infertility.¹⁵ Rats with genetic defects in tight junction formation exhibit excessive water loss through the skin.¹⁶ With either defect, most of the rats die soon after birth. Essential fatty acid deficiency therefore seems to be a result of our bodies having insufficient arachidonic acid available to synthesize the PGE₂ needed to turn on the genes involved in forming critical junctions between cells.

HOW ESSENTIAL ARE THE ESSENTIAL FATTY ACIDS?

The Burrs cured essential fatty acid deficiency in young, growing rats using 0.4 percent of calories as polyunsaturated fatty acids (PUFA) when provided by lard and 0.1 percent of calories when provided by liver.⁷ Evidence suggests the require-

Later experiments showed that butter, which contains small amounts of both fatty acids, could fully cure the disease if provided in large enough amounts.

FIGURE 1. Tails of Essential Fatty Acid Deficient and Normal Rats



a. This rat was fed the essential fatty acid deficient diet without a curative oil. Its tail is plagued by dermatitis and scaly lesions.

b. This rat was fed the essential fatty acid deficient diet supplemented with 0.4 percent of calories as PUFA provided by lard. Its tail is entirely normal in appearance.

ment is similar in human infants. This is discussed in more detail in the sidebar below. The essential fatty acid requirement, however, is influenced by other factors. The refined sugar used in these experiments increases the requirement.¹⁸ Vitamin B₆ alone resolved the deficiency in later experiments by dramatically increasing the synthesis of arachidonic acid from linoleic acid stored in the tissues.¹⁹ Diets low in refined sugar and rancid vegetable oils, adequate in protein and total energy, and rich in vitamin B₆, biotin, magnesium, and whole, fresh foods abundant in natural antioxidants are likely to reduce the essential fatty acid requirement to such a degree that it is impossible for a healthy, growing child under ordinary circumstances to develop a deficiency.

The requirement in adults is likely to be even

lower. Researchers at the University of Wisconsin Madison first tried to produce essential fatty acid deficiency in adult rats in 1947.²⁰ The only way they were able to induce a deficiency was to starve the rats until they lost half their bodyweight. As they gained back the weight they had lost over the subsequent two months, they developed typical symptoms of essential fatty acid deficiency such as scaly skin and hair loss. A small amount of corn oil proved curative, but even in the deficient rats the symptoms disappeared when they returned to their original weight. It thus appears that most of the arachidonic acid required during growth is used to supply dividing cells with enough to store in their membranes, and to form junctions between newly generated cells. Adult rats, by contrast, can probably meet their much smaller needs for arachidonic acid even when they go long periods without any essential fatty acids in the diet by synthesizing it from the linoleic acid they have stored in their tissues.

George Burr's first human guinea pig was his good friend and distinguished colleague Jesse F. McClendon.¹ McClendon is best remembered as the first researcher to directly measure the pH of the human stomach, but

HOW ESSENTIAL ARE THE ESSENTIAL FATTY ACIDS? A MORE DETAILED LOOK

The requirement for essential fatty acids is, under most conditions, exceedingly small. This should not be surprising; after all, if we require omega-6 fatty acids because we need enough arachidonic acid to allow our body to convert into signaling compounds as it needs them, then arachidonic acid fills a role similar to that of vitamins A and D. We require several hundred micrograms per day of vitamin D and several milligrams per day of vitamin A. To put this in perspective, we consume proteins, carbohydrates and fats in gram amounts. A microgram is one millionth of a gram and a milligram is one thousandth of a gram. We should therefore expect the requirement for essential fatty acids to constitute an extremely small percentage of our total energy intake.

Researchers who attempted to quantify the essential fatty acid requirement using purified fatty acids showed that just over two percent of calories as linoleic acid was needed to prevent deficiency in growing rats while less than 0.7 percent of calories as arachidonic acid was needed.¹⁰ Lower amounts of arachidonic acid may have proven effective had the researchers tested them. The Burrs did not use this approach. They used purified fatty acids to prove the point that the fatty acids themselves were curative, but used whole foods to quantify the requirement. "All workers," they wrote, "recognize the fact that the acids isolated by the bromination method may not have exactly the same structure that they had in the natural oil."⁸ The Burrs showed that the requirement was only 0.4 percent of calories when they used lard to cure the disease in growing rats and that the requirement was only 0.1 percent of calories when they used liver to cure it.⁷ Liver probably proved more effective than lard both because it is much richer in arachidonic acid and because it is rich in vitamin B₆, which greatly enhances the conversion of linoleic acid to arachidonic acid.¹⁹

The essential fatty acid requirement seems to be similar in humans. Butter supplying 1.3 percent of calories as PUFA prevented poor growth, scaly skin and increased susceptibility to infections in human infants consuming a formula made partly from skim milk and mostly from corn syrup, but the investigators did not try using smaller amounts.²⁸ The same authors reported that both 1.3 percent and 2.0 percent of calories as purified linoleic acid incorporated into a synthetic fat molecule cured eczema in infants fed the same type of formula.²⁹ The requirement for purified linoleic acid in human infants fed a diet composed mostly of refined sugar is thus similar to the requirement in young, growing rats fed a similarly atrocious diet, which suggests that the essential fatty acid requirement in infants and growing children can be met by a diet providing less than 0.5 percent of calories as PUFA from animal fat, and much less than this if the fat is provided by liver.

One naturally wonders what the essential fatty acid requirement might be in people who are not consuming most of their calories as refined sucrose or corn syrup. In the 1960s, researchers compared the effect of starch-based and sucrose-based diets on PUFA metabolism. Both diets were deficient in essential fatty acids. The starch-based diet contained only 0.003 percent more calories as linoleic acid than the sucrose-based diet, but the rats fed starch had 50 percent more arachidonic acid and 80 percent more linoleic acid in their livers than the rats fed sucrose.¹⁸ Similarly, in essential fatty acid-deficient infants fed 80 percent corn oil, replacement of half the corn oil with hydrogenated coconut oil, which is completely devoid of PUFAs, substantially improved their eczema. High-sucrose diets increase lipid peroxidation in rats,³⁰ a process that causes the destruction of essential fatty acids. Reducing refined sugar in the diet is therefore likely to sharply reduce the essential fatty acid requirement. A number of other factors may reduce this requirement as well, including biotin, vitamin B₆, calcium, magnesium, avoidance of rancid vegetable oil, sufficient intake of protein and total energy, and a diet rich in fresh, whole foods abundant in natural antioxidants.³¹

he made substantial contributions to a number of fields including nutrition, cell membrane biology and invertebrate zoology. At the urging of White Castle owner Billy Ingram, he once conducted an experiment on a medical student, allowing the student to eat nothing but White Castle hamburgers and their associated buns and pickles for thirteen weeks. The student appeared to fair well on the diet and the study became a prominent feature of White Castle's advertising.²¹ If only McDonald's had been so lucky when Morgan Spurlock performed a similar experiment for his 2003 film *Super Size Me*. McClendon himself, however, had suffered from scaly skin and eczema between his fingers even in the absence of any potent hamburg-emia. At Burr's urging, he cured the problem with a daily dose of corn or flax oil.¹

Inducing an essential fatty acid deficiency in an adult human proved much more difficult than curing one. In 1938, the biochemist William Brown volunteered to go six months eating an extremely low-fat diet in Burr's laboratory. Each day, he consumed three quarts of defatted milk, a quart of cottage cheese made from it, sucrose, potato starch, orange juice and some vitamin and mineral supplements. His blood lipids became more saturated and their concentrations of linoleic and arachidonic acids were cut in half. He experienced a marked absence of fatigue, his high blood pressure returned to normal, and the migraines he had suffered from since childhood completely disappeared.²² Rather than inducing a deficiency, the diet seemed to correct a long-standing excess, perhaps fueled by a history of vegetable oil consumption.

Dermatitis seemingly associated with essential fatty acid deficiency has occurred in adult humans on total parenteral nutrition (TPN), which is an intravenous infusion of a liquid diet. These diets were also deficient in vitamin K, iron, zinc, and various other trace elements, and essential fatty acids alone were never shown to resolve the dermatitis.²³⁻²⁴ TPN also involves a continuous infusion of glucose, which prevents the breakdown of adipose tissue and release of stored linoleic acid that would ordinarily occur between meals.²⁵ All of the subjects receiving TPN, moreover, had severe underlying health problems, were often undergoing major gastrointestinal surgery, and were sometimes at the brink of death.

These disparate experiences highlight the likely variation that exists in vulnerability to essential fatty acid deficiency among adult humans. Alcoholism, diabetes, insulin resistance and certain genetic variations decrease the activity of delta-6-desaturase, one of the enzymes involved in the conversion of linoleic acid to arachidonic

acid.²⁶ Experiments in rats, moreover, suggest that the requirement during pregnancy and lactation is double that needed during the growth of young animals.²⁷ Under ordinary circumstances, the requirement during adulthood is probably well below the minimum one could obtain from a diet made of whole foods. During pregnancy, periods of growth such as bodybuilding or recovery from tissue injury, or in disease states where existing PUFAs undergo oxidative destruction, the requirement may increase. People with low rates of arachidonic acid synthesis or strict vegetarians whose diets are devoid of arachidonic acid may be more vulnerable to essential fatty acid deficiency and may need higher intakes of linoleic acid. In these cases, borage oil or evening primrose oil can supply dihomo- γ -linolenic acid (DGLA), which is more easily converted into arachidonic acid than is linoleic acid, and liver or eggs yolks can supply arachidonic acid itself. These foods are likely to be more effective—and safer—than high intakes of linoleic acid.

THE ESSENTIALITY OF OMEGA-3 FATTY ACIDS

George Burr's former graduate student, Ralph Holman, demonstrated in 1950 with his own graduate student, C. Widmer, that PUFAs are comprised of two separate families of fatty acids: linoleic acid is the precursor within the omega-6 family and is primarily converted in rat tissue to arachidonic acid, while alpha-linolenic acid (ALA) is the precursor within the omega-3 family and is primarily converted in rat tissue to docosahexaenoic acid (DHA).³² Omega-3 fatty acids improved weight gain to some degree in essential fatty acid deficient rats, but had no power to cure dermatitis,³² infertility, or many other symptoms.¹⁷ In fact, omega-3 ALA made the dermatitis worse.¹⁹ The research community therefore ignored omega-3 fatty acids for decades. Once Ralph Holman and his colleagues convinced the medical establishment to include linoleic acid in intravenous TPN infusions, however, suddenly a new deficiency was born.

In 1982, Holman reported the first case of apparent omega-3 deficiency in a six-year-old girl who underwent repeated rounds of surgery for an abdominal gunshot wound and was maintained for over five months on TPN. The FDA had recently approved the addition of vegetable oils to TPN to provide linoleic acid, and two formulas were available: one containing safflower oil and one containing soybean oil.³³ The safflower oil formula contained an omega-6-to-omega-3 ratio of one hundred fifteen, while the soybean formula contained a ratio of six, almost twenty times lower.³⁴

Inducing an essential fatty acid deficiency in an adult human proved much more difficult than curing one.

Our bodies use the same enzymes to convert ALA to DHA as they use to convert linoleic acid to arachidonic acid. A great excess of one precursor can therefore outcompete the other for the enzymatic machinery.

After five months of the safflower oil formula, the girl experienced episodes of numbness, tingling, weakness, inability to walk, leg pain, psychological disturbances and blurred vision—symptoms that researchers had never seen in essential fatty acid deficient animals or in humans receiving fat-free TPN. Her blood levels of omega-3 fatty acids were low. When her physicians switched her to the soybean oil formula, her omega-3 fatty acid levels returned to normal and her neurological symptoms disappeared.

Animal experiments suggest that great excesses of linoleic acid are required to cause deficiencies in omega-3 fatty acids. In every organ, the concentration of DHA vastly outweighs the concentration of any other omega-3 fatty acid, but levels of DHA are especially high in the brain and retina, where its concentration is tightly regulated.³⁵ In the early development of these tissues, small amounts of omega-3 fatty acids are required to provide maximal DHA content; after this window is closed, however, the brain and retina are very resistant to the effects of deficiency, just as mature animals and adult humans are resistant to the effects of arachidonic acid deficiency under ordinary circumstances.

Even during early development, however, great excesses of omega-6 linoleic acid are required to cause substantial decreases in the omega-3 DHA content of the brain and retina. When fed to weanling rats, the classic sucrose-casein essential fatty acid-deficient diet only depletes retinal DHA content by 15 percent. The addition of ten percent of calories as safflower oil, however, causes a much more dramatic 50 percent depletion.³⁶ Feeding rats two percent of their calories as purified linoleic acid depletes the DHA content of the retina by 62 percent in the first generation and 92 percent in the second generation.³⁷ Similar effects occur in the brain.³⁸⁻³⁹ Depletion of retinal and brain DHA using linoleic acid-rich vegetable oils causes visual and possibly learning defects in rats and rhesus monkeys.⁴⁰⁻⁴²

Our bodies use the same enzymes to convert ALA to DHA as they use to convert linoleic acid to arachidonic acid. A great excess of one precursor can therefore outcompete the other for the enzymatic machinery. Large amounts of any PUFA, moreover, will cause the cell to make less of this enzymatic machinery by convincing the cell that it is no longer needed.²⁶ This competition and cellular confusion can be avoided altogether by providing small amounts of preformed arachidonic acid and DHA in the diet. Even though the concentration of DHA in breast milk is very small, the brains of breast-fed infants accumulate fifty percent more

DHA than those of infants fed formulas devoid of the fatty acid.⁴³ When a mother improves her DHA status by supplementing with cod liver oil during pregnancy and the first three months of lactation,⁴⁴ it improves her child's IQ at four years of age, although the effect is drowned out by other factors as the child grows older.⁴⁵

The requirement for DHA is likely to be most critical during pregnancy, lactation, early development, and other periods of growth, tissue repair, or diseases involving the oxidative destruction of lipids.⁴⁶ People who consume linoleic acid-rich vegetable oils are likely to have greatly decreased conversion of ALA to DHA. Since this is the norm on the standard American diet, most Americans eating a standard diet may be vulnerable to DHA deficiency. People who convert ALA to DHA poorly or strict vegetarians whose diets are completely devoid of DHA may benefit from consuming sources of preformed DHA such as cod liver oil or egg yolks from pastured chickens. Small amounts of cod liver oil are also useful in a broader range of circumstances to provide vitamins A and D.

THE OMEGA-6-TO-OMEGA-3 RATIO

An often-cited animal experiment suggested that the ideal ratio of omega-6 linoleic acid to omega-3 ALA is four-to-one, but this experiment injected rats with free fatty acids rather than feeding them dietary oils.⁴⁷ A more realistic experiment that fed rats a mix of various vegetable oils in a broad range of different proportions showed that a ratio of nine-to-one maximized tissue DHA content just as well as lower ratios.⁴⁸ The precise ratio is likely to be of much less importance, however, when there is preformed arachidonic acid and DHA in the diet. Nevertheless, people who consume the standard American diet rich in vegetable oils may face adverse consequences from consuming excess linoleic acid and people who consume large amounts of fatty fish, fish oil or cod liver oil may face adverse consequences from consuming an excess of the omega-3 fatty acid eicosapentaenoic acid (EPA).

Among ten populations studied from five different continents, American adults have the highest blood levels of omega-6 fatty acids and American infants have the lowest blood levels of omega-3 fatty acids.³³ Up until the 1930s, Americans consumed on average about 15 grams (one tablespoon) of PUFA per day. Since the 1930s, this value has more than doubled to over 35 grams per day as Americans have increased their intake of vegetable oils rich in the omega-6 linoleic acid (see Figure 2).² Most of this increase occurred after 1961 when the American Heart Association began recommending

that people replace saturated fats with vegetable oils in order to lower cholesterol levels.³

Similar increases in linoleic acid have been shown to decrease the conversion of ALA to longer-chain omega-3 fatty acids such as DHA in humans.⁴⁹ Human studies tend to look at the fatty acids incorporated into red blood cells, but animal experiments provide much more detailed information about the concentrations of fatty acids in the organs and glands where they are most needed. These experiments show that excesses of linoleic acid do not increase tissue concentrations of arachidonic acid; instead, they replace the true omega-3 DHA with a “fake” omega-6 version of DHA that ordinarily is not found in substantial amounts within the body.⁵⁰ The main effect of the excess linoleic acid in the standard American diet is thus most likely to be a mild form of DHA deficiency.

The effect of excess linoleic acid is probably most detrimental to infants and young children whose brains are still developing. DHA deficiency during early development may have lasting effects on cognitive and visual function during adulthood. Animal experiments even suggest that these effects are multi-generational, with the DHA concentration of nervous tissue declining with each successive generation.

Even in adulthood, however, dietary fats influence the DHA concentrations of most other tissues. Recent research has shown that our tissues use DHA to synthesize compounds called “resolvins,” which are involved in bringing inflammatory responses to an end when they are no longer

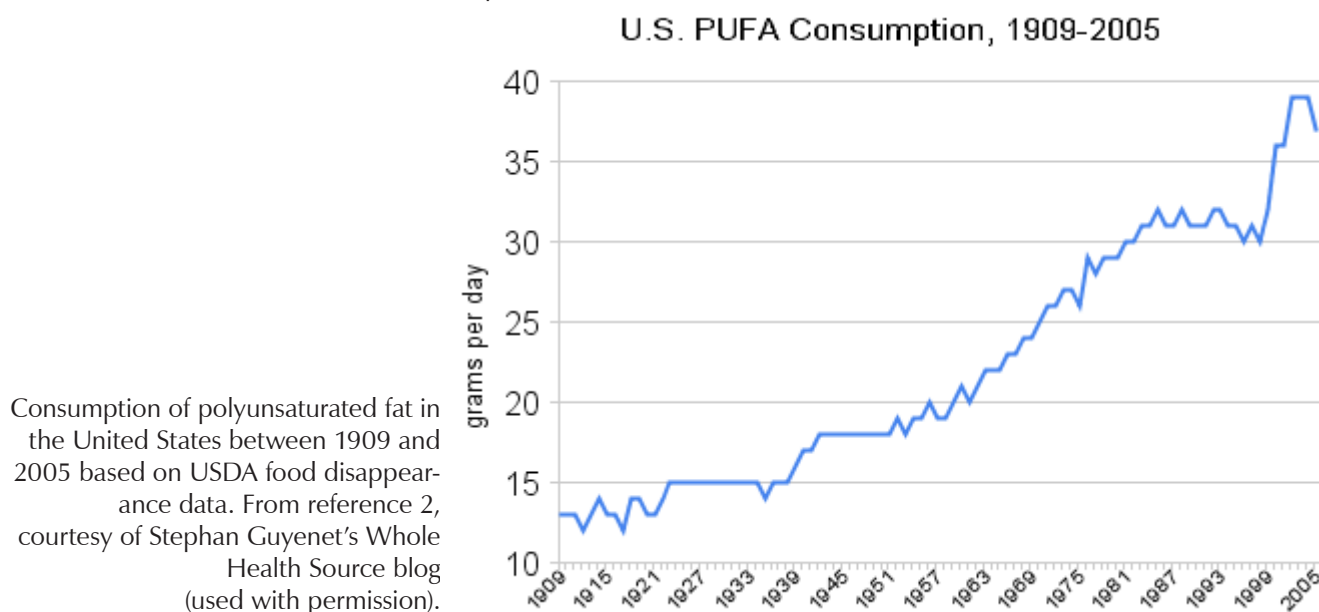
needed.⁵¹ Sufficient DHA thus allows the immune system to mount a robust inflammatory response against invading pathogens or damaged tissues and to bring the response quickly to an end once the task has been accomplished. Researchers are increasingly discovering that most degenerative diseases involve an element of chronic, low-level inflammation, and the inability to “turn off” important inflammatory processes once they are no longer needed could be part of the problem. DHA deficiency may therefore be at the root of widespread declines in cognitive function, increases in mental disorders and epidemic levels of degenerative disease.

EPA, a precursor to DHA, is an omega-3 fatty acid that accumulates in fish but generally exists in only infinitesimal quantities in mammals and other land animals. Many authors consider EPA an “anti-inflammatory” essential fatty acid, but its “anti-inflammatory” activity is a result of its ability to interfere with arachidonic acid metabolism. The conversion of arachidonic acid to PGE₂ in immune cells is an important initiator of inflammation, but it also turns on the genes necessary for the synthesis of compounds that resolve inflammation, some of which are derived from arachidonic acid and others of which are derived from DHA.⁵² Providing sufficient DHA to allow the synthesis of the full spectrum of inflammation-resolving compounds is a nutritional approach to inflammation. Providing high doses of EPA that interfere with arachidonic acid metabolism, however, is a pharmacological approach, and it is likely to have many adverse consequences.

When Holman and Widmer first discovered the dichotomy between omega-3 and omega-6 fatty acids, they examined nine different tissues in rats on normal lab diets and could not find even a trace of EPA unless they had first induced essential fatty acid deficiency and all its related tissue damage.³² Several years later Holman conducted a study with another colleague showing that ALA aggravated essential fatty acid deficiency; if they gave the animals vitamin B₆, however, the rats converted ALA to DHA rather than to EPA and the aggravating effect disappeared.¹⁹ More recent studies in humans have provided preliminary evidence suggesting that EPA interferes with growth in infants and immune function in adults, while DHA improves both growth and immune function.⁵³⁻⁵⁴

John Hughes Bennett, a nineteenth century Scottish physician who

FIGURE 2. Increase in American PUFA Consumption



The same conditions that reduce the requirement for arachidonic acid and DHA are likely to increase a person's tolerance for EPA.

traveled the world studying the use of cod liver oil in medicine, wrote in his *Treatise on Cod Liver Oil* that excessive doses over extended periods of time could cause gastrointestinal problems, excessive menstrual bleeding, itchy skin eruptions and excessive evaporation of water through the skin.⁵⁵ The last three symptoms seem very much like the hormonal disruptions, hemorrhaging and skin problems known to occur during arachidonic acid deficiency. Had the Burrs looked for gastrointestinal disorders during essential fatty acid deficiency, they probably would have found them. Non-steroidal anti-inflammatory drugs (NSAIDs) work their magic by interfering with the production of PGE₂ from arachidonic acid, a characteristic they share with EPA. One of the most common set of side effects associated with these drugs is gastrointestinal disturbances. Four out of ten users of NSAIDs experience symptoms such as heartburn, acid reflux, stomach burning, nausea, or bloating.⁵⁶ Researchers have used NSAIDs to produce food intolerances in mice that result in a form of severe intestinal damage called villous atrophy that is usually associated with celiac disease,⁵⁷ suggesting that a deficiency of arachidonic acid or the PGE₂ made from it may underlie celiac disease and other food intolerances, perhaps by preventing the gut from forming cellular junctions and thus impairing its integrity. Excessive doses of EPA from fatty fish, fish oil and cod liver oil may contribute to all of these symptoms in susceptible individuals.

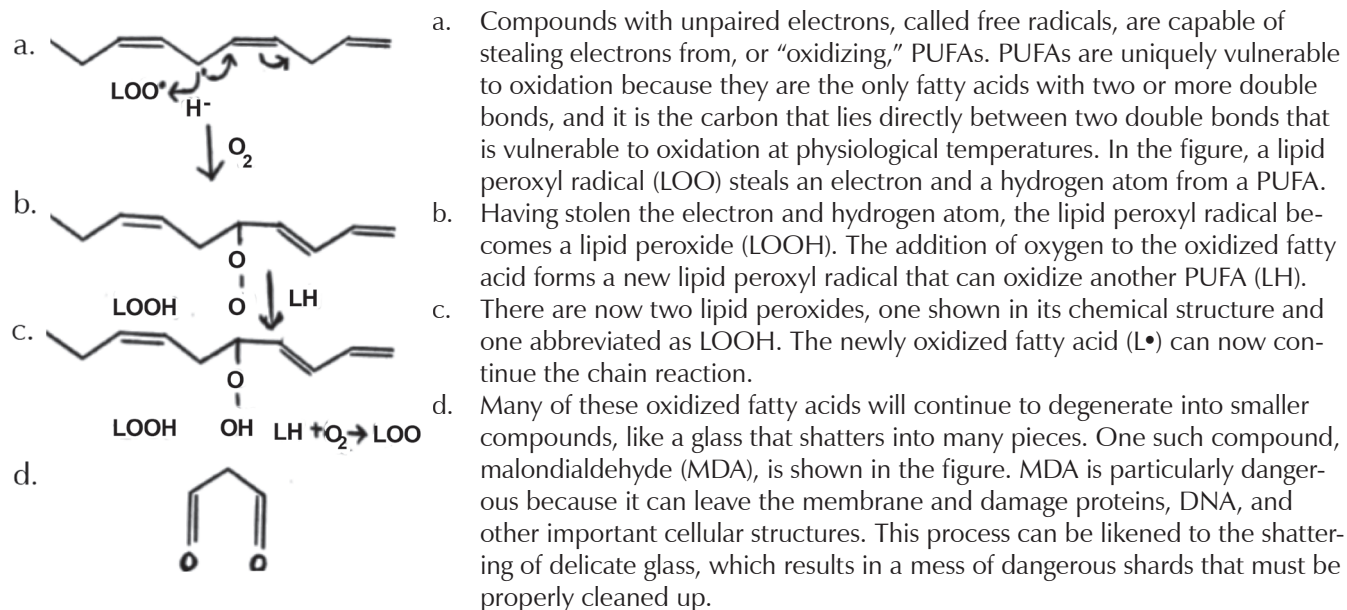
Our bodies use the same enzymes to convert EPA to DHA as they use to convert ALA to DHA

or linoleic acid to arachidonic acid. The same conditions that reduce the requirement for arachidonic acid and DHA are likely to increase a person's tolerance for EPA. A diet that excludes refined sugar and rancid vegetable oil, is low in total PUFA content, is adequate in protein and total energy, and is rich in vitamin B₆, biotin, calcium, magnesium, and fresh, whole foods abundant in natural antioxidants should not carry any risk of arachidonic acid deficiency when moderate amounts of EPA are consumed. Liberal amounts of egg yolks and liver providing preformed arachidonic acid would provide extra insurance against damage by EPA. Under these conditions, it would be safe to consume cod liver oil—valuable for its abundant provision of DHA, vitamin A and vitamin D—in spite of its EPA content.

THE PERILS OF PUFA: OXIDATIVE STRESS

In 1985, the lipid researcher Hugh Sinclair gave a pre-banquet speech on his seventy-fifth birthday before the Second International Congress on Essential Fatty Acids, Prostaglandins and Leukotrienes in London, in which he described the deleterious effects of one hundred days on an "Eskimo diet" of seal blubber and undeodorized mackerel oil. He went on the diet to measure his bleeding time because the weather during a recent trip with several colleagues to northwestern Greenland had curtailed him from measuring the bleeding times of real Eskimos. Despite a daily supplement of vitamin E, his blood and urine levels of malondialdehyde (MDA)—a product of the oxi-

FIGURE 3. Oxidative Stress and the Shattering of Delicate PUFAs



ductive destruction of PUFA (see Figure 3d)—rose to fifty times the normal level. Although MDA causes birth defects, Sinclair was not worried about having “misshapen offspring” because his sperm had disappeared.³¹

Sinclair’s experience illustrates one of the unique dangers of all essential fatty acids, regardless of their class—their vulnerability to oxidative stress.

Oxidative stress, or lipid peroxidation, shown in Figure 3, can be thought of as the destruction of structurally and functionally important molecules within the body, beginning with the shattering of PUFAs. PUFAs, in this sense, are like delicate glass. Glass performs many useful functions: we use it to protect ourselves and our property from the assaults of raging storms, for the utensils from which we eat and drink, to see when our vision fails, to examine complex specimens whose details we cannot otherwise distinguish with the naked eye, and in many other more sophisticated examples of modern technology. At the same time, glass is delicate and can shatter. When glass shatters, it invariably leaves behind a mess of dangerous shards. Anyone who breaks a glass on their kitchen floor knows to clean up the shards immediately, lest they or their family cut their feet by walking on them. Likewise, when PUFAs shatter they leave behind shards such as MDA, which are capable of damaging proteins, DNA and other structurally and functionally important components of our cells.

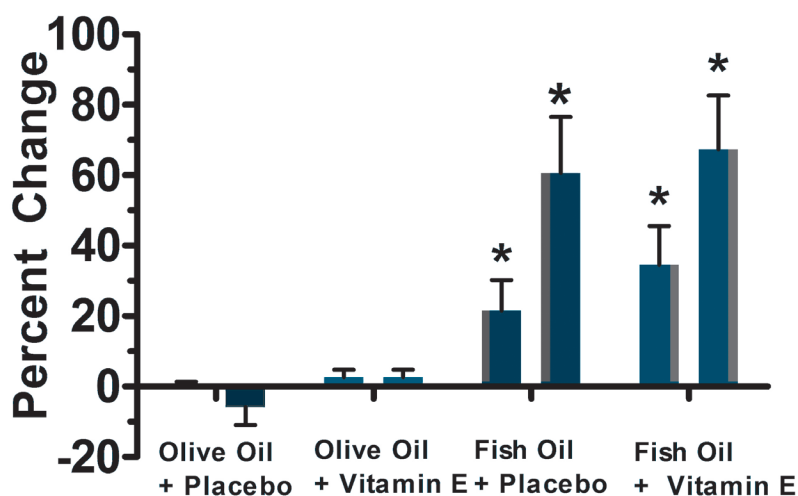
The best way to avoid shattering glass is to be careful with how one uses, cleans and stores

it. Nevertheless, the danger of breaking glass will increase simply by having too much of it around. Likewise, the consumption of excess PUFAs increases oxidative stress even when the oils are fresh and properly cared for. Consumption of fresh, non-oxidized DHA, EPA or omega-3-rich perilla oil increases markers of oxidative stress in rats.⁵⁸ Rats fed 30 percent of their diet as corn oil have double the rate of lipid peroxidation, half the aerobic capacity, and 42 percent lower glycogen stores in their heart tissue compared to rats fed an equal amount of coconut oil.⁵⁹ A randomized, double-blind, placebo-controlled trial likewise showed that six grams per day of fish oil increased lipid peroxides and MDA in healthy men, regardless of whether they were supplemented with 900 IU of vitamin E (see Figure 4).⁶⁰

Sinclair might have better replicated the “Eskimo diet” had he sought the guidance of an Eskimo. Arachidonic acid is necessary for sperm production, and the liberal consumption of glands and other organs rich in arachidonic acid may protect the Inuit and Aleut peoples from the high levels of EPA they obtain from fatty fish and marine oils.³¹ There may be other components of their traditional diets that limit the vulnerability of PUFAs to oxidative stress, such as antioxidants like coenzyme Q₁₀, lipoic acid, and preformed vitamin A found abundantly in organ meats, or other unknown factors. Human studies have generally used alpha-tocopherol, a form of vitamin E, to protect against the oxidation of fish oils within the body, but supplements of pure alpha-tocopherol suppress

Oxidative stress, or lipid peroxidation, can be thought of as the destruction of structurally and functionally important molecules within the body, beginning with the shattering of PUFAs.

FIGURE 4. Fish Oil Increased in Lipid Peroxides and MDA in Humans While Vitamin E Had No Effect



A double-blind, randomized, placebo-controlled trial compared six weeks of supplementation with six grams per day of omega-3 fatty acids from menhaden fish oil to supplementation with six grams per day of olive oil, with or without 900 IU per day of vitamin E as synthetic alpha-tocopherol, in healthy men. For each group, the bar on the left represents the change in lipid peroxides, and the bar on the right represents the change in MDA. Asterisks indicate a statistically significant increase over the course of the six weeks. Fish oil supplementation caused a significant increase in lipid peroxides while MDA and vitamin E had no effect. Adapted from the data in reference 60.

A five-member ad hoc committee chaired by Irvine Page authored the report, concluding that it would be “premature” to act on the hypothesis that heart disease results from insufficient polyunsaturated oils.

levels of gamma-tocopherol, a different form of vitamin E with a unique spectrum of antioxidant protection. Some of the main oxidants in human blood, moreover, are water-soluble so PUFAs require water-soluble antioxidants such as vitamin C for protection. Exactly which components of the traditional Inuit diet best protected them from their high intake of fish oils is unclear, but Sinclair’s experience demonstrates the danger of attempting to replicate a particular peculiarity of one group’s traditional diet without replicating the diet as a whole.

DO VEGETABLE OILS PREVENT HEART DISEASE?

While the amount of essential fatty acids required to prevent deficiency diseases may be nearly infinitesimal under most conditions, it may be possible that the optimal amounts are much higher. Research, however, suggests quite the opposite: even though the medical establishment has recommended the consumption of vegetable oils to prevent heart disease for decades, randomized, controlled trials conducted in humans demonstrated conclusively that vegetable oils cannot decrease atherosclerosis and suggested that they probably cause cancer.

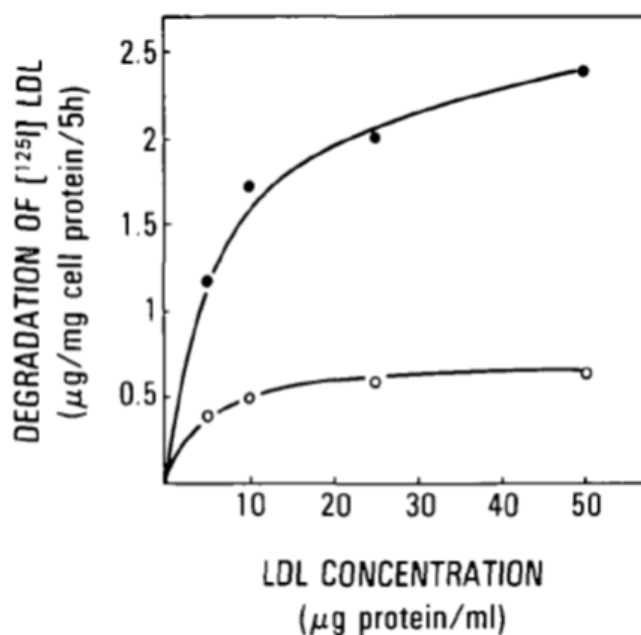
Experiments in the 1950s showed that “milk shakes” with their natural fats removed and replaced with vegetable oils could lower cholesterol levels in humans when compared to “milk shakes” filled with saturated fats.⁶¹⁻⁶² A number of research-

ers suggested that replacement of traditional saturated fats with the newfangled vegetable oils would decrease the risk of heart disease by decreasing cholesterol levels and thereby decreasing the accumulation of atherosclerotic plaque.

The American Heart Association criticized this hypothesis in 1957 because no research had yet shown that making such a substitution could actually prevent the occurrence of a heart attack. A five-member ad hoc committee chaired by Irvine Page authored the report, concluding that it would be “premature” to act on the hypothesis that heart disease results from insufficient polyunsaturated oils and that research should focus on the actual diseases of atherosclerosis, heart attacks, and strokes rather than presumed surrogate markers like serum cholesterol.⁶³ Four years later, the state of the evidence remained the same but three members of the committee were dropped and replaced by four new members, including Ancel Keys, a leading proponent of the theory that dietary animal fat causes heart disease. The updated report recommended that men who are overweight, have high blood pressure or high cholesterol, lead “sedentary lives of relentless frustration,” or have a strong family history of heart disease should replace part of the saturated fat in their diets with polyunsaturated fat.³

In the ensuing years, many researchers published trials of dietary fat substitution, but most of them were poorly designed and poorly controlled. Only six randomized, controlled trials specifically

FIGURE 5. The Oxidation of LDL, Not Its Concentration, Determines Atherosclerosis



The open circles represent non-oxidized LDL and the filled circles represent LDL in which the PUFAs of the outer membrane have been oxidized. The vertical axis shows the absolute amount of LDL taken up by immune cells called macrophages. The horizontal axis shows the concentration of LDL with which the macrophages were incubated. The concentrations used are below what is found in human blood. The uptake of non-oxidized LDL reaches an early plateau, and a five-fold increase in concentration has virtually no effect on the amount of LDL taken up by the macrophages. The oxidation of LDL, by contrast, increases the uptake five-fold, and the uptake continues to increase as the concentration of oxidized LDL in the medium increases. This suggests that the concentration of non-oxidized LDL in the blood has no effect on the formation of atherosclerotic plaque, while the oxidation of PUFAs in the LDL membrane likely promotes atherosclerosis.

Figure from reference 72.

testing the substitution of polyunsaturated vegetable oils for animal fats have been published.⁶⁴⁻⁶⁹ These trials are discussed in more detail in the sidebar below. None of the trials showed that replacing traditional animal fats with polyunsaturated vegetable oils could lower mortality. Instead, the studies suggested that such a substitution increases the risk of cancer after a period of about five years and may increase the risk of heart disease as well.

In March of 1984, *Time Magazine* released a cover story entitled “Hold the Eggs and Butter,” announcing that “cholesterol is proved deadly” and lauding the American Heart Association for having been right all along in suggesting that we should banish fatty animal foods from our diet in favor of polyunsaturated oils.⁷⁰ The AHA had recommended this for 23 years and finally, the authors proclaimed, there was scientific evidence to prove the case. This scientific evidence, however, had nothing to do with eggs and butter. The National Institutes of Health had hoped to create a massive, double-blind study replacing animal fats with polyunsaturated oils, but abandoned the project after two years, claiming that the diets did not lower cholesterol levels as much as they expected. They then conducted what went down in history as the Coronary Primary Prevention Trial, successfully lowering the risk of heart disease using cholestyramine, a drug that increases the conversion of cholesterol to bile acids. However, the reduction in heart disease mortality was offset by an increase in deaths from cancer, accidents and other causes,

so that total mortality remained unchanged. The study was nevertheless widely hailed as having finally proved that cholesterol causes heart disease.

Three months later, the *Proceedings of the National Academy of the Sciences* published a critical paper that the media completely ignored.⁷¹ One of the authors was Daniel Steinberg, who chaired the NIH Consensus Conference later that December. The Consensus Conference provided official government sanction to the proclamation that cholesterol had been proven deadly. Steinberg’s paper showed that the critical change in the LDL particle that renders it toxic to the cells lining the blood vessel walls is the oxidation of the PUFAs in its outer membrane. The same authors showed that cells of the immune system called macrophages would take up oxidized LDL, but not non-oxidized LDL, in a concentration-dependent manner (see Figure 5).⁷² Later experiments showed that the components of the oxidized LDL particle that turn on specific genes causing macrophages to turn

VEGETABLE OILS AND HEART DISEASE: A CLOSER LOOK

Six randomized, controlled trials specifically testing the effect of the substitution of polyunsaturated vegetable oils for animal fats on heart disease have been published.⁶⁴⁻⁶⁹

The first randomized, controlled trial of dietary fat substitution was published in 1965. Substitution of corn oil for animal fat and carbohydrate doubled the number of major cardiac events. The results were not quite statistically significant, meaning there was a slight possibility they were due to chance. The researchers concluded “that under the circumstances of this trial corn oil cannot be recommended as a treatment of ischaemic heart disease. It is most unlikely to be beneficial, and it is possibly harmful.”⁶⁴

A second trial found that replacing animal fats with polyunsaturated vegetable oils increased mortality by 39 percent. Rather than considering the possibility that the lipid hypothesis might be false, the investigators concluded that “men who have had myocardial infarction are not a good choice for testing the lipid hypothesis.”⁶⁶

Three other such trials found either no effect,^{65, 67} or a small increase in mortality in the group consuming vegetable oil, which was not statistically significant.⁶⁸

The longest study on the effect of vegetable oil ever conducted was the Wadsworth Veterans Administration Hospital Study.⁶⁹ The researchers randomized over four hundred men who were long-term inpatients to one of two dining halls. One hall used butter and the other used a mix of vegetable oils. The study was double-blinded and lasted over eight years. The researchers took care not to reuse the vegetable oil after cooking but took no such precautions with the butter, resulting in butter that was very deficient in vitamin E.⁷⁴ There were also twice as many heavy smokers and 60 percent more moderate smokers in the butter group. The group consuming butter had 50 percent more cardiovascular deaths. The group consuming vegetable oil, however, had more atherosclerosis than the control group and in the last few years of the study began experiencing a marked increase in the risk of cancer. Total mortality was slightly higher among those consuming vegetable oil, but the difference was not statistically significant.

There are two remarkable findings about this study. Even though cardiovascular deaths were lower in the vegetable oil group, atherosclerosis slightly increased. This clearly disproves the hypothesis that vegetable oils decrease the accumulation of atherosclerotic plaque by decreasing cholesterol levels. It further suggests that had there been an equal distribution of smokers between groups and had the control group received adequate vitamin E, vegetable oil may have proven to markedly increase the accumulation of atherosclerotic plaque as well as the risk of cardiovascular mortality. The fact that cancer began rising in the vegetable oil group in the last few years of the study—again, despite the heavy rate of smoking and deficient intake of vitamin E in the control group—suggests that the full extent of the ravages of oxidative stress and inflammation caused by vegetable oils takes at least five years to develop. A longer study may have shown a much greater risk of mortality in the vegetable oil group. These six studies clearly show that vegetable oils are not capable of reducing total mortality and strongly suggest that they may raise the risk of heart disease and cancer.

themselves into the fatty “foam cells” that populate atherosclerotic plaques, are oxidized derivatives of linoleic acid.⁷³

The obvious implication of these studies is that the oxidative destruction of PUFAs in the LDL membrane, but not the concentration of cholesterol carried in the blood by these LDL particles, determines the development of atherosclerosis. It is no wonder, then, that trials attempting to prevent heart disease with diets rich in polyunsaturated vegetable oils failed so miserably.

DO FISH OILS PREVENT HEART DISEASE?

Researchers in the 1970s suggested that the high content of omega-3 fatty acids in the diet of the Greenland Inuit may have protected them from heart disease by lowering their cholesterol and triglyceride levels.⁷⁵ Since then, dozens of randomized, controlled trials have tested the effect of fish oil supplementation on total and cardiovascular mortality, discussed in more detail in the sidebar

below. These studies suggested that about one gram of long-chain omega-3 fatty acids per day may prevent arrhythmia in patients prone to chronic heart failure or in patients recovering from a recent heart attack. They also suggested that long-term use of fish oils for more than four years may actually increase mortality from heart disease and all causes.

Many other groups eating traditional diets appear to be free or nearly free of heart disease, and a high intake of marine oils is not a universal trait of these diets. The main source of fat for the Masai, for example, is highly saturated butterfat. The inhabitants of Tokelau consume a diet based mostly on coconut and to a lesser extent on seafood, and even the seafood they prepare contains only two percent of its calories as long-chain omega-3 fatty acids.⁷⁶ The inhabitants of Kitava consume about two percent of their total calories as omega-3 fatty acids,⁷⁷ which is greater than the amount that Tokelauans consume but much lower than the amount that the Inuit consume. The traditional diet of Crete provides most of its fat as saturated butterfat from cheese and as monounsaturated olive oil, and contains very little fish.⁷⁸ If we are to offer a hypothesis about what protects all these groups from heart disease, we must first identify what their traditional diets share in common. The most obvious place to start is the complete absence of refined foods. A very high intake of marine oils, by contrast, is a specific peculiarity of the Inuit diet.

FISH OILS AND HEART DISEASE: A CLOSER LOOK

Dozens of randomized, controlled trials have tested the effect of fish oil supplementation and increases in the intake of fatty fish on total and cardiovascular mortality. Virtually all of them have been conducted in people with established heart disease taking drugs such as statins and aspirin, and most of them have lasted fewer than two years. In 2004, the Cochrane Collaboration published a massive review and meta-analysis of these trials.⁷⁹ Meta-analyses pool the data of many studies together in an attempt to show the big picture and test whether methodological differences between trials or random chance are more likely to account for differences in results. When the authors pooled the data from forty-eight trials lasting longer than six months, the only effect that could be distinguished from chance was a reduced risk of heart failure. Fish oil provided no reduction in total or cardiovascular mortality.

Trials lasting less than one year were most likely to show positive results, while the only trial lasting more than four years—the Diet and Reinfarction 2 (DART 2) trial—showed a 15 percent increase in total mortality and a 30 percent increase in cardiovascular mortality. DART 2 used dietary advice to increase fatty fish intake in addition to fish oil supplementation, so could not be placebo-controlled or double-blind, and unfortunately funding problems led to interruptions of the recruitment process in the middle of the trial. Nevertheless, with over three thousand participants it was one of the largest fish oil trials ever conducted and, with over four years follow-up, it was the longest fish oil trial ever conducted. Thus, we should not casually dismiss the findings of this trial.

A recent meta-analysis brought to light eleven trials that were placebo-controlled and lasted more than one year.⁸⁰ Pooling the data from these studies together showed that fish oil reduced the relative risk of cardiovascular death by 13 percent and reduced the relative risk of all-cause mortality by 8 percent.

The Italian GISSI-Prevenzione and GISSI-Heart Failure trials were the largest included in this meta-analysis and were responsible for most of the effect. These trials, together with the DART 1 trial, suggested that fish oil may prevent arrhythmia in patients with chronic heart failure and patients who have recently survived a heart attack.⁸¹ Researchers provided participants with roughly one gram of long-chain omega-3 fatty acids per day. The GISSI trials found a long-term benefit over the course of almost four years in heart failure patients but a much shorter-term benefit concentrated in the first year of the study in patients who had recently undergone a heart attack. The DART 1 trial similarly found an early benefit of fatty fish consumption and fish oil supplementation in patients who had recently suffered from a heart attack. Fish oil thus seems likely to prevent very specific types of heart failure rather than to prevent heart disease more generally.

None of these trials provided any evidence that healthy people benefit from taking fish oil or that doses higher than one gram of omega-3 fatty acids per day provide any benefit over smaller doses. The results of the DART 2 trial are particularly concerning because, like the results of the Wadsworth Veterans Administration Hospital Study (see sidebar on page 29), they suggest that high intakes of PUFAs may increase the risk of morbidity and mortality when consumed over the course of many years.


BACK TO TRADITIONAL DIETS

Experimental evidence shows clearly that the requirement for essential fatty acids is infinitesimal under most conditions and can be easily met by eating a diet that includes traditional whole animal foods without necessarily adding any specific fats or oils. There is very little evidence to suggest that consuming higher amounts of these fatty acids under ordinary conditions is health-promoting.

At the same time, many foods containing PUFAs provide other important nutrients. The Inuit, for example, obtained vitamin D from fatty fish and marine oils. Inland-dwelling Inuit who did not have access to these foods were vulnerable to disorders of calcium deficiency.⁸² These included fits of involuntary muscle contractions called tetany, and a type of hysteria called *pibloktoq* in the native language. *Pibloktoq* involves several days of irritability or withdrawal, a sudden excitation wherein the victim flees the camp and engages in irrational and dangerous behavior, convulsive seizures, a twelve-hour period of coma or stuporous sleep, and a final return to normal. It would be absurd to argue that the Inuit should have avoided the fatty fish and marine oils that helped prevent these conditions simply because they provided omega-3 fatty acids in great excess of the amount needed to promote health.

The most common plant foods Weston Price mentions in *Nutrition and Physical Degeneration* are the banana and sweet potato, but he also reported the use of cereal grains and legumes among many groups, and other authors have reported the use of substantial amounts of nuts and seeds among the Australian Aborigines. These foods would provide an excess of linoleic acid, but would also provide a broad spectrum of other useful nutrients. All of the groups Price studied consumed organ meats, which reduces the risk of an imbalance between omega-3 and omega-6 fatty acids by providing preformed arachidonic acid and DHA, and may supply critical antioxidants necessary to protect excess PUFAs from oxidizing within the body. The use of a single component of these diets such as nuts and seeds or high-dose fish oil without the use of other components such as organ meats, however, may provoke the ravages of imbalanced PUFA intake and oxidative stress.

The need for essential fatty acids increases during childhood, body-building, recovery from injury, chronic disease states, pregnancy and lactation. During these times, the use of foods such as liver and egg yolks from

pasture-raised animals and small amounts of cod liver oil is especially important. Some individuals may, for unknown reasons, require higher intakes of essential fatty acids. Symptoms of deficiency are shown in Figure 6 and can be used to determine whether someone might benefit from increasing their intakes of these foods. Rather than denouncing the essential fatty acids as “toxic” because they can promote inflammation or oxidative stress, they should be seen as delicate and precious nutrients that must be handled properly, taken in appropriate amounts, and taken within the context of a traditional diet rich in a broad spectrum of nutrient-dense foods. Within this context, the essential fatty acids will promote robust, radiant and vibrant health. 

Chris Masterjohn is a frequent contributor to Wise Traditions and the creator and maintainer of Cholesterol-And-Health.Com, a website dedicated to extolling the virtues of cholesterol and cholesterol-rich foods. He has authored three publications published in peer-reviewed journals: a letter in the Journal of the American College of Cardiology criticizing the conclusions of a study on saturated fat, a letter in the American Heart Journal arguing that safety trials of cholesterol ester transfer protein inhibitors should test the effect of these drugs on vitamin E metabolism, and a full-length hypothesis paper published in Medical Hypotheses about the molecular mechanism of vitamin D toxicity. Chris holds a Bachelor's degree in History and is currently a doctoral student in Nutritional Sciences at the University of Connecticut. He will be a speaker at Wise Traditions 2010.

FIGURE 6. Symptoms of Essential Fatty Acid Deficiency

The following symptoms are based on a combination of animal and human evidence. Some of the symptoms are associated with severe deficiency and unlikely to be encountered under ordinary circumstances, and there are undoubtedly symptoms of each deficiency that are absent from the lists. These lists should help identify likely cases of essential fatty acid deficiency.

ARACHIDONIC ACID DEFICIENCY

- Dry, scaly, and itching skin
- Hair loss
- Dandruff
- Reproductive difficulties in both males and females
- Gastrointestinal disturbances
- Food intolerances
- Kidney disease
- Inability to maintain weight
- Poor immunity
- Poor growth
- Inflammation

DHA DEFICIENCY

- Numbness and tingling
- Weakness
- Pain
- Psychological disturbances
- Poor cognitive function and difficulty learning
- Poor visual acuity
- Blurred vision
- Poor immunity
- Poor growth
- Inflammation

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ALASKA FISHING TRIP



Judith (center) and Mike (right) Mudrak, winners of the Alaska trip raffle sponsored by David and Barbara Wetzel of Green Pasture Products, proudly display a catch of halibut from the cold Alaskan waters. To participate in the raffle for the Alaska trip in 2011, visit the Green Pastures booth



Judith Mudrak (center) with beautiful Inuit ladies. While in Alaska, Judith sought out native foods and ate raw whale skin and blubber, cooked whale meat, cooked and fermented walrus, roasted seal, fermented rosewood, seal oil and cooked small fish dipped in seal oil.

Magnificent Magnesium

The Neglected Mineral We Cannot Live Without

by Katherine Czapp

Magnesium is an alkaline earth metal, the eighth most abundant mineral found in the earth's crust. Because of its ready solubility in water, magnesium is the third most abundant mineral in sea water, after sodium and chloride. In the human body, magnesium is the eleventh most plentiful element by mass—measuring about two ounces. Most magnesium contained in the body is found in the skeleton and teeth—at least 60 to 65 percent of the total. Nearly the entire remaining amount resides in muscle tissues and cells, while only one percent is contained in our blood.

The importance of magnesium ions for all life itself, as well as for overall vibrant health, is hard to overstate. Magnesium is required to give the “spark of life” to metabolic functions involving the creation of energy and its transport (ATP, the body's fundamental energy currency), and the creation of proteins—the nucleic acid chemistry of life—RNA and DNA, in all known living organisms. In plants, a magnesium ion is found at the center of every chlorophyll molecule, vital for the creation of energy from sunlight. Magnesium is an essential element for both animals and plants, involved in literally hundreds of enzymatic reactions affecting virtually all aspects of life.

Every single cell in the human body demands adequate magnesium to function, or it will perish. Strong bones and teeth, balanced hormones, a healthy nervous and cardiovascular system, well-functioning detoxification pathways and much more depend upon cellular magnesium sufficiency. Soft tissue containing the highest concentrations of magnesium in the body include the brain and the heart—two organs that produce a large amount of electrical activity, and which can be especially vulnerable to magnesium insufficiency.

Magnesium works in concert with calcium to regulate electrical impulses in the cell—magnesium concentration inside healthy cells is ten thousand times greater than calcium, and there are crucial reasons for this safeguard. Cellular calcium channels allow that mineral to enter the cell only as long as needed to conduct an impulse; it is ushered out immediately by magnesium once its task is fulfilled. This vigilance is necessary to prevent calcium accumulation in the cell, which could cause dangerous hyper-excitability, calcification, cell dysfunction and even cell death. When excess calcium enters the cells because of insufficient magnesium, muscle contraction is sustained for too long, and we suffer, for example, twitches and tics in mild cases. When magnesium deficiency becomes chronic, we suffer the symptoms of heart disease such as angina pectoris, hypertension and arrhythmia, or the spasms and contractions char-

acteristic of asthma, migraine headache or painful menstrual cramping.

Magnesium operates as a natural calcium channel blocker and is responsible for relaxation—counter to calcium's contraction. Thus magnesium is pivotally important to the healthy functioning of our parasympathetic nervous system. It may be hard to believe, but our bodies were actually designed to operate for the most part in a calm, relaxed parasympathetic state, rather than in the heart-pounding, stress- and adrenaline-driven mode of sympathetic nervous system dominance that is nearly constant for many of us today, and which uses up great quantities of magnesium.

Magnesium is so important to so many vital body functions, and its deficiency is integrally involved in so many diseases, that more than one researcher has dubbed magnesium a miracle in its ability to resolve or improve numerous disorders. The current list of disorders with direct and confirmed relationships to chronic and acute magnesium deficiency is long, and includes many diseases whose conventional medical treatment does not commonly address magnesium insufficiency (see below). Ongoing research promises to uncover further associations between magnesium deficiency and other illnesses.

MAGNESIUM DEFICIENCY IS ENDEMIC

Unfortunately, it is difficult to reliably supply our bodies with sufficient magnesium, even from a good, balanced whole foods diet. First of all, modern agricultural methods favor the universal use of NPK fertilizers (nitrogen, phosphorus, and potassium). Both potassium and phosphorus are antagonists of magnesium in the soil, and on calcareous soils create a relative magnesium deficiency (the magnesium present is bound and therefore unavailable to the crop). On sandy or loamy soils that are slightly acid, an actual magnesium deficiency often exists, as the magnesium leaches from the soil and is also unavailable to the crop. This leaching also occurs in response to acid rain. Magnesium, in fact, is one of the most depleted minerals in farm soils. To add insult to injury, new plant hybrids are continually introduced that have

THE MANY EFFECTS OF MAGNESIUM DEFICIENCY

- ADD/ADHD
- Alzheimer's
- Angina pectoris
- Anxiety disorders
- Arrhythmia
- Arthritis—rheumatoid and osteoarthritis
- Asthma
- Autism
- Auto-immune disorders
- Cerebral palsy in children of Mg deficient mothers
- Chronic Fatigue Syndrome
- Congestive Heart Failure
- Constipation
- Crooked teeth/narrow jaw in children from Mg deficient mothers
- Dental caries
- Depression
- Diabetes, types I and II
- Eating disorders—bulimia and anorexia
- Fibromyalgia
- Gut disorders including peptic ulcer, Crohn's disease, colitis
- Heart disease
- Hypertension
- Hypoglycemia
- Insomnia
- Kidney stones
- Lou Gehrig's disease
- Migraines
- Mitral valve prolapse
- Multiple sclerosis
- Muscle cramping, weakness, fatigue
- Myopia—in children from Mg deficient mothers
- Obesity—especially associated with high carbohydrate diet
- Osteoporosis
- Parkinson's disease
- PMS—including menstrual pain and irregularities
- PPH (Primary pulmonary hypertension)
- Reynaud's syndrome
- SIDS (Sudden Infant Death Syndrome)
- Stroke
- Syndrome X
- Thyroid disorders

Source: *Primal Body—Primal Mind*, by Nora Gedgaudas.

The body
requires at
least
twenty-eight
molecules of
magnesium to
metabolize a
single
molecule of
glucose.

been bred to survive on these mineral-depleted soils. Of course, when mineral-depleted crops are eaten by animals or by us, they will sooner or later cause disease. Even though organically raised crops should be a better bet nutritionally, this isn't always the case, and it pays in terms of your health to learn how your farmer replenishes the minerals on his fields.

"Do you know that most of us today are suffering from certain dangerous diet deficiencies which cannot be remedied until depleted soils from which our food comes are brought back into proper mineral balance? The alarming fact is that foods (fruits, vegetables, grains) now being raised on millions of acres of land that no longer contain enough of certain minerals are starving us—no matter how much of them we eat. The truth is that our foods vary enormously in value, and some of them aren't worth eating as food." These words of warning are from the 74th Congress, 2nd session, Senate document number 264, of 1936. It is truly sobering to learn that the decline in soil mineral balance was a topic of serious national concern more than seventy years ago, and the deficit has been affecting us—while steadily getting worse—since our grandparents' generation.

Magnesium and other nutrients are diminished or lost in produce after harvest, through handling, refrigeration, transport and storage, even if all these steps were done "properly." Buying produce and then storing it for days in your own refrigerator continues the nutrient loss, whether the produce is from the supermarket or your local farmers' market.

Food processing causes enormous loss of magnesium in foods that are commonly fairly good sources of it, such as leafy greens, nuts, seeds and whole grains. Most of the magnesium in grain—found in the bran and germ—is lost in milling whole grains for white flour, which is used nearly exclusively for hundreds of devitalized processed food items. When nuts and seeds are roasted or their oils extracted, magnesium is lost. Cooking greens causes whatever magnesium they might contain to leach into the cooking water. Foods tend to lose less calcium than magnesium through these processes, adding to a troublesome dietary calcium overload that we will discuss shortly.

Fluoride in drinking water binds with magnesium, creating a nearly insoluble mineral compound that ends up deposited in the bones, where its brittleness increases the risk of fractures. Water, in fact, could be an excellent source of magnesium—if it comes from deep wells that have magnesium at their source, or from mineral-rich glacial runoff. Urban sources of drinking water are usually from

surface water, such as rivers and streams, which are low in magnesium. Even many bottled mineral waters are quite low in magnesium, or have a very high concentration of calcium, or both.

A diet of processed, synthetic foods, high sugar content, alcohol and soda drinks all "waste" magnesium, as a lot of it is required for the metabolism and detoxification of these largely fake foods. According to Dr. Natasha Campbell-McBride, the body requires at least twenty-eight molecules of magnesium to metabolize a single molecule of glucose. Phosphates in carbonated drinks and processed meats (so-called "luncheon meats" and hot dogs) bind with magnesium to create the insoluble magnesium phosphate, which is unusable by the body.

Tannins, oxalates, and phytic acid all bind with magnesium, making it unavailable to the body unless extra care is taken to neutralize some of these compounds during food preparation. It is interesting to note that foods commonly containing magnesium (provided they were grown in mineral-rich soil) also contain lots of these anti-nutrients, such as spinach (oxalates) and whole grains (phytates).

Many commonly prescribed pharmaceutical drugs cause the body to lose magnesium via the urine, such as diuretics for hypertension; birth control pills; insulin; digitalis; tetracycline and some other antibiotics; and corticosteroids and bronchodilators for asthma. With the loss of magnesium, all of the symptoms being "treated" by these drugs over time inevitably become worse.

Magnesium absorption is impeded with the use of supplemental iron. If you take calcium supplements, your need for magnesium increases, and in fact calcium will not be properly absorbed or metabolized if adequate magnesium is missing, and will mostly end up dangerously deposited in soft tissues. Magnesium is responsible for converting vitamin D to the active form that allows calcium to be absorbed, and also regulates calcium's transport to hard tissues where it belongs. Lactose is another inhibitor of magnesium absorption (and milk is not a good source of the mineral to begin with), along with excess potassium, phosphorus and sodium.

Mental and physical stress, with its related continuous flow of adrenaline, uses up magnesium rapidly, as adrenaline affects heart rate, blood pressure, vascular constriction and muscle contraction—actions that all demand steady supplies of magnesium for smooth function. The nervous system depends upon sufficient magnesium for its calming effects, including restful sleep. Hibernating animals, by the way, maintain very high levels of magnesium. Magnesium deficiency will accelerate a vicious cycle and amplify the effects of

chronic stress, leading to more anxiety, irritability, fatigue and insomnia—many of the symptoms of adrenal exhaustion—as well as to hypertension and heart pains—symptoms of heart disease.

Depression is related to stress and magnesium deficiency as well. Serotonin, the “feel good” hormone, requires magnesium in its delicate balance of release and reception by cells in the brain. Only when adequate levels are present can we enjoy mental and emotional equilibrium.

For reasons not fully understood, the body does not retain magnesium very well; certainly not as well as it holds onto calcium or iron, for example. Heavy sweating from endurance sports such as marathon running or strenuous exercise workouts can dangerously deplete magnesium stores and other electrolytes—although calcium is not wasted, by the way—resulting in trembling, faintness and even seizures and death. The drenching sweats that some menopausal women suffer cause magnesium loss as well, and their diminishing magnesium levels worsen their jagged nerves, sleep disturbances, panic attacks, body aches and depression. If these women have been tempted to consume modern soy products in a misguided attempt to moderate their symptoms, they will in fact lose even more magnesium because it will be bound to the abundant phytates in these concoctions.

A healthy gut environment is necessary for proper absorption of magnesium from the diet. Irritable bowel syndrome, leaky gut, candidiasis and other gut disorders can severely limit the amount of magnesium that the body will be able to absorb. Older adults often experience decreased stomach hydrochloric acid production, which can impair mineral absorption in general. And with so many treating their “heartburn” with antacids, a healthy digestive environment is hard to maintain.

CALCIUM AND MAGNESIUM PARTNERSHIP

Both calcium and magnesium are necessary for the healthy body—in proper balance to one another, as well as to other necessary minerals. Considered biochemical antagonists, one cannot act without eliciting the opposite reaction of the other. Yet calcium and magnesium must both be present in balanced amounts for either one to function normally in the body. Some researchers suggest that the healthy ratio of calcium to magnesium in the diet should be 2:1. Others consider 1:1 to reflect ratios that we evolved with based on our diet prior to the advent of agriculture. In modern industrialized countries the ratio from diet is from 5:1 to as much as 15:1. The imbalance of these two very important minerals produces many dire consequences in the body that are often overlooked by medical practi-

tioners when treating the disease states they cause.

Aside from the intricate electrical dance that calcium and magnesium perform together, magnesium is necessary to keep calcium in solution in the body, preventing its inappropriate deposition in soft tissues. As long as we have sufficient hydrochloric acid in our stomachs we can dissolve calcium from the foods we eat. After calcium leaves the acidic environment of the stomach and enters the alkaline milieu of the small intestine however, it is magnesium that is necessary to keep calcium soluble. Without sufficient magnesium, a whole host of physiological aberrations can occur with serious health consequences.

As Dr. Carolyn Dean, author of *The Magnesium Miracle*, explains, “In the large intestine it [precipitated calcium] interferes with peristalsis, which results in constipation. When calcium precipitates out in the kidneys and combines with phosphorus or oxalic acid, kidney stones are formed. Calcium can deposit in the lining of the bladder and prevent it from fully relaxing, and therefore from filling completely with urine. This leads to frequent urination problems, especially in older people. Calcium can precipitate out of the blood and deposit in the lining of the arteries, causing hardening (arteriosclerosis). . . It can coat and stiffen. . . plaque in the arteries. . . [and] can cause blood pressure to rise as well as increase the risk of heart attack and stroke. Calcium can even deposit in the brain. Many researchers are investigating it as a possible cause of dementia, Alzheimer’s and Parkinson’s disease. Calcium can deposit in the lining of the bronchial tubes and cause asthma symptoms. Calcium in extracellular fluid. . . can decrease the permeability of cell membranes. This makes it increasingly difficult for glucose (a large molecule) to pass through the cell membrane to be converted to ATP in the cells’ mitochondria. High glucose levels created by excess calcium may be misdiagnosed as diabetes.”

MAGNESIUM IS A POTENT DETOXIFIER

Magnesium is utilized by the body for all sorts of detoxification pathways and is necessary for the neutralization of toxins, overly acidic conditions that arise in the body, and for protection from heavy metals. It plays a vital role in protecting us from the onslaught of man-made chemicals all around us. Glutathione, an antioxidant normally produced by the body and a detoxifier of mercury, lead and arsenic among others, requires magnesium for its synthesis. According to Mark Sircus, in *Transdermal Magnesium Therapy*, a deficiency of magnesium increases free radical generation

The nervous system depends upon sufficient magnesium for its calming effects, including restful sleep.

Regardless of the amount of calcium you consume, your teeth can only form hard enamel if magnesium is available in sufficient quantities.

in the body and “causes glutathione loss, which is not affordable because glutathione helps to defend the body against damage from cigarette smoking, exposure to radiation, cancer chemotherapy, and toxins such as alcohol and just about everything else.”

When our bodies are replete with magnesium (and in balance with the other essential minerals) we are protected from heavy metal deposition and the development of associated neurological diseases. As Dr. Carolyn Dean explains, “Research indicates that ample magnesium will protect brain cells from the damaging effects of aluminum, beryllium, cadmium, lead, mercury and nickel. We also know that low levels of brain magnesium contribute to the deposition of heavy metals in the brain that heralds Parkinson’s and Alzheimer’s. It appears that the metals compete with magnesium for entry into the brain cells. If magnesium is low, metals gain access much more readily.

“There is also competition in the small intestine for absorption of minerals. If there is enough magnesium, aluminum won’t be absorbed.”

MAGNESIUM DEFICIENCY IN TOOTH DECAY AND OSTEOPOROSIS

Ask anyone—your neighbor or even your dentist or doctor—what bones and teeth require to be strong and healthy, and you will undoubtedly hear the response, “Plenty of calcium.” Bones and teeth certainly do require calcium—as well as phosphorus and magnesium, but without adequate amounts of the latter, calcium will not be deposited in these hard tissues, and the structures will not be sound. “When you load up your system with excess calcium,” writes William Quesnell, in *Minerals: the Essential Link to Health*, “you shut down magnesium’s ability to activate thyrocalcitonin, a hormone that under normal circumstances would send calcium to your bones.” Instead of providing benefits to the body, the displaced calcium actually becomes toxic, causing trouble in soft tissues of the kinds we’ve already discussed.

Numerous studies, in fact, have established the fact that it is dietary magnesium, not calcium, (and certainly not fluoride) that creates glassy hard tooth enamel that resists decay, and strong and resilient bones. Regardless of the amount of calcium you consume, your teeth can only form hard enamel if magnesium is available in sufficient quantities.

According to J. I. Rodale, in *Magnesium: the Nutrient that Could Change Your Life*, “For years it was believed that high intakes of calcium and phosphorus inhibited decay by strengthening the enamel. Recent evidence, however, indicates that an increase in these two elements is useless

unless we increase our magnesium intake at the same time. It has even been observed that dental structures beneath the surface can dissolve when additional amounts of calcium and phosphorus diffuse through the enamel at different rates. Thus milk, poor in magnesium, but high in the other two elements, not only interferes with magnesium metabolism, but also antagonizes the mineral responsible for decay prevention.”

To revisit Deaf Smith County, Texas, and the justly famous residents whose teeth refused to succumb to decay, Rodale quotes the observations of Dr. Lewis Barnett, presented in a paper before the Texas Medical Association in Dallas, 1952. Dr. Barnett, an orthopedic surgeon, remarked on the low incidence of tooth decay and rapid healing of broken bones among these residents, and offered this explanation: “[The local] water and foods have a very high magnesium and iodine content and recently we have proven that all of the trace minerals known to be essential are present in the water and foods grown in that area.” Further, Dr. Barnett had found that the magnesium bone content of the average Deaf Smith County resident was up to five times higher than that of a resident of Dallas, while the concentrations of calcium and phosphorus were about the same in both groups. His observations led him to state that “[o]ne of the most important aspects of the disease osteoporosis has been almost totally overlooked. That aspect is the role played by magnesium.”

Rodale emphasizes the fact that Dr. Barnett gave much of the credit for these health benefits to the high magnesium content of the local water, and noted many signs of superior bone development among people in the area: “Dr. Barnett makes mention of the fact that people in older years frequently have fracture of the cervical neck of the femur and these are very difficult to heal in many localities. However, he noted that this fracture rarely occurs in Deaf Smith County, whereas it was common in Dallas County, Texas, where he also practiced. When a fracture did occur in Deaf Smith, healing was easy and rapid even in people eighty to one hundred years old. In contrast, fractures in Dallas were common and very difficult to heal, if not impossible.”

Over fifty years ago Dr. Barnett tested the magnesium levels of five thousand people and found sixty percent of them to be deficient. How much more of the population is deficient today, when all of the negative conditions contributing to that deficiency have been certainly amplified?

FOOD SOURCES OF MAGNESIUM

As we’ve mentioned, if farm soils are well-

THE MAGNESIUM CONTENT OF MILK

In general, milk is not a rich source of magnesium, but many cultures throughout the ages have depended upon dairy foods as the foundation of balanced, healthy diets that conferred strength and vitality. Weston Price, for example, investigated residents of the Swiss Alps as well as the African Maasai whose sturdy, disease-resistant individuals had little or no tooth decay. But can we can replicate those diets with the same health-giving properties if we depend upon today's industrialized food model?

The mineral composition of milk depends upon many factors, including the breed of animal, stage of lactation, frequency of milking, environmental conditions, type of pasture, soil makeup and amount of soil contamination. Grass tetany, for instance, is a serious and potentially fatal condition in cattle characterized by extremely low levels of serum magnesium. Also called "grass staggers" or "wheat pasture poisoning," it is the result of animals grazing on fast-growing young grass in spring or fall on soil that is severely magnesium deficient, as can happen when the pastures have been fertilized with high nitrogen and potassium fertilizers. In acute poisoning, the animal can be saved by injections of magnesium sulfate; yet subclinical magnesium deficiency in the herd may go undetected.

By contrast, pastures that offer a great deal of plant diversity to grazing animals also offer diversity to the soil ecology as well as nutrient diversity to the ruminant. In a Swiss study that examined thirty plant species of alpine pastures, researchers found that "the botanical composition of an alpine pasture has a significant influence on the nutritive value of the forage.... Compared with grass species, legumes and herbs showed a lower content of cell walls but a higher content of crude protein, as well as four times the content of calcium and twice the content of magnesium." The Swiss visited by Dr. Price grazed their cattle on alpine slopes populated by numerous plant species and watered by the mineral-rich glacial run-off—water the villagers also used in drinking and cooking.

Numerous stresses can take their nutritional toll on the dairy animal and therefore on the quality of her milk. Crowding, confinement, filth and unnatural fodder come to mind instantly as obvious offenders, but too frequent milking—more than once a day—can result in dilution of nutrients in the milk. The daily output is greater, but the nutrients are fewer by volume.

"The mineral content of milk and popular meats has fallen significantly in the past 60 years, according to a new analysis of government records of the chemical composition of everyday food," begins an article in the *Guardian* about researcher David Thomas's comparison of food tables from 1940 and 2002. The research was done for the consumer watchdog group in the UK, the Food Commission, and published in their quarterly journal, *The Food Magazine*. Mineral declines in dairy products showed that milk lost 60 percent of its iron, 2 percent of its calcium, and 21 percent of its magnesium. Compared to 1940, currently "[m]ost cheeses showed a fall in magnesium and calcium levels. According to the analysis, cheddar provides 9 percent less calcium today, 38 percent less magnesium and 47 percent less iron, while parmesan shows the steepest drop in nutrients, with magnesium levels down by 70 percent."

Ignoring the declining magnesium content in foods such as dairy products may have confounded some analyses of disease etiology in large populations. Anti-animal-fat proponents tend to blame the rampant incidence of heart disease among the Finns on their high intakes of dairy products. However, according to Dr. Mildred Seelig, of New York University Medical Center, "In Finland, which has a very high death rate from IHD (ischemic heart disease), there is a clear relationship with heart disease and the amount of magnesium in the soil. In eastern and northern Finland, where the soil content is about a third of that found in southwestern Finland, the mortality from ischemic heart disease is twice as high as is that in the southwest. Ho and Khun surveyed factors that might be contributory both to the rising incidence of cardiovascular disease in Europe, and the falling levels of magnesium both in the soil and in the food supply. They commented that in Finland, which has the highest cardiovascular death rate in Europe, the dietary supply of magnesium has decreased by 1963 to a third of the intake common in 1911."

Modern, urban Finns of course consume pasteurized dairy products, which not only have reduced magnesium levels to begin with thanks to modern farming practices, but also have less soluble calcium as a result of the denaturing of the enzyme phosphatase during pasteurization. Calcium that is not soluble precipitates out to soft tissue, such as the vascular system, and can contribute to a cascade of ominous events linked to heart disease.

We might surmise from these observations, then, that dairy products must be produced with reverence not only to the beast herself, but also to the soil that feeds the pasture that feeds her. When all nutrients are in balance with one another we can expect the food to have the power to truly nourish us.

Countless stressors in life today increase the body's demands for magnesium—by our challenged endocrine systems, by environmental poisons that must be neutralized, by excess refined carbohydrates in our diets, to name a few. The balance of nutrients provided in the foods in the groups that Dr. Price visited was also in felicitous balance with those peoples' physical, emotional, and social ecologies. We can only strive, both as consumers and producers of food, to achieve that equilibrium in the ecologies we inhabit.

mineralized, leafy green vegetables, seeds, tree nuts and whole grains are fairly good sources of magnesium. Certain wild-crafted forage foods really stand out, however, such as nettles (860 mg per 100 grams) and chickweed (529 mg per 100 grams), and add many tonic and nutritive benefits to both human and livestock diets largely due to their high mineral content. Kelp, ancient denizen of the sea, contains spectacular levels, as do most sea vegetables. Remember that they are continually bathed in a solution whose third most abundant mineral is magnesium. And authentic, unrefined sea salt is a very good source of magnesium, along with trace minerals. Utilizing bone broths on a daily basis will provide another excellent source of minerals, including magnesium, in a highly assimilable form.

STRATEGIES FOR
MAGNESIUM SUPPLEMENTATION

Even with ideal digestive conditions, only a percentage of magnesium in foods will be absorbed—less when amounts in the body are adequate and more if there is a deficiency. This is also true of magnesium supplements, and there are many of them on the market to confuse you. For the average person, magnesium supplementation is safe to experiment with on your own, especially if you know you have symptoms that could be related to magnesium deficiency or are under extra stress, and so on. Excess magnesium is excreted in urine and the stool, and the most common response to too much magnesium is loose stools. Those with renal insufficiency or kidney disease, extremely slow heart rate, or bowel obstruction should avoid magnesium therapy.

General dosage recommendations range from about 3 to 10 milligrams per pound of body weight, depending upon physical condition, requirements for growth (as in children), and degree of symp-

toms. Oral magnesium supplements are available in organic salt chelates, such as magnesium citrate and magnesium malate. These are fairly well absorbed, especially in powder forms to which you add water and can tailor your dosage. It is important to divide your dosage during the day so that you do not load your body with too much magnesium in any single dose. Carolyn Dean recommends taking your first dose early in the morning and another in the late afternoon—these correspond to times when magnesium levels are low in the body. Is it just a coincidence that these times of low magnesium and low energy also correspond to the cultural rituals of morning coffee and afternoon tea?

Loose stools indicate you are not absorbing the magnesium, but that it is acting as a laxative. When the magnesium travels through the intestines in less than twelve hours, it is merely excreted rather than absorbed. If you find you cannot overcome the laxative effect by varying your dosages, you may want to try an oral supplement that is chelated to an amino acid, such as magnesium taurate and magnesium glycinate, which some consider to be better absorbed than the salt forms and less likely to cause loose stools.

For those who need a little help with digestion, such as young children, older adults, and anyone with reduced stomach acid or bowel dysbiosis, consider homeopathic magnesium, also referred to as tissue salts or cell salts. *Magnesia phosphorica 6X* is the appropriate dosage, and it works to usher magnesium into the cells where it belongs. It is also indicated as a remedy for muscle spasms and cramps of many varieties. Mag phos can help reduce and eliminate loose stools while you are supplementing with oral magnesium, giving you a positive sign that your body is indeed taking the magnesium into the cells.

Yet another option for oral magnesium supplementation is ionic magnesium in liquid form, such as that offered by Trace Minerals Research. This is a sodium-reduced concentration of sea water from the Great Salt Lake in Utah. Only about a teaspoon is needed to deliver about 400 milligrams of magnesium (along with seventy-two other trace minerals), which should be taken in divided amounts during the day. I recommend adding this to soups (made with bone-broth bases of course) as the strong mineral taste is hard to take straight. You can also add this to spring and other drinking water to up the magnesium content and use it in cooking. By “micro-dosing” your food and water in this fashion you greatly reduce any laxative effects a large dose of magnesium might elicit.

Another potential way to get more magnesium into your system is via the

FOOD SOURCES OF MAGNESIUM					
In milligrams per 100 grams					
Kelp	760	Pecan	142	Beets	25
Wheat bran	490	Walnut	131	Broccoli	24
Wheat germ	336	Rye	115	Cauliflower	24
Almonds	270	Tofu curdled by Mg nigiri	111	Carrot	23
Cashews	267	Coconut meat, dried	90	Celery	22
Blackstrap molasses	258	Collard greens	57	Beef	21
Nutritional yeast	231	Shrimp	51	Asparagus	20
Buckwheat	229	Corn, sweet	48	Chicken	19
Brazil nuts	225	Avocado	45	Green pepper	18
Dulse	220	Cheddar cheese	45	Winter squash	17
Filberts	184	Parsley	41	Cantaloupe	16
Peanuts	175	Prunes	40	Eggplant	16
Millet	162	Sunflower seeds	38	Tomato	14
Wheat whole grain	160	Sweet potato	31	Milk	13

pleasant method of soaking in a bath of magnesium sulfate, otherwise known as Epsom salts. Commonly used to ease muscle aches and pains, magnesium sulfate also importantly helps with detoxification when sulfur is needed by the body for this purpose. When used intravenously, magnesium sulfate can save lives in such crises as acute asthma attack, onset of myocardial infarction, and eclampsia in pregnancy.

A couple of cups of Epsom salts added to a hot bath will induce sweating and detoxification; after the water cools a bit, the body will then absorb the magnesium sulfate. According to Mark Sircus in *Transdermal Magnesium Therapy*, the effects from a bath of Epsom salts, although pleasant, are brief as magnesium sulfate is difficult to assimilate and is rapidly lost in the urine. Magnesium chloride, which can also be used in baths, is more easily assimilated and metabolized, and so less is needed for absorption.

Finally, magnesium may be applied topically in a form commonly called magnesium "oil." This is actually not an oil at all, but a supersaturated concentration of magnesium chloride and water. It does feel oily and slippery when applied to the skin, but it absorbs quickly, leaving a slightly tacky, "sea salt" residue that can be washed off. There are many advantages to transdermal magnesium therapy, since the gastrointestinal tract is avoided altogether and there is no laxative effect. Next to intravenous magnesium administration, transdermal therapy provides a greater amount of magnesium to be absorbed than even the best tolerated oral supplements, and can restore intracellular concentrations in a matter of weeks rather than the months required for oral supplementation.

MISSING LINK?

It is likely safe to say that most people would benefit from an increased supply of magnesium in their diets, especially in these times of so many

dietary, environmental, and social stressors. Of course no single nutrient stands alone in relation to the body, and the first priority is to eat a varied diet of whole plant and animal foods from the best sources near you. Adding extra magnesium, however, might be the missing nutritional link to help us guard against heart disease, stroke, depression, osteoporosis and many other disorders. In the prevention and alleviation of these diseases, magnesium can be truly miraculous. ☯

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2010 SWISS TRIP: IN THE FOOTSTEPS OF DR. PRICE



LEFT: Fearless leader Judith Mudrak, on right, with adventurous participants.



RIGHT: Traditional sourdough breadmaking.



LEFT: Traditional cheesemaking in a copper kettle.



RIGHT: Liz Pitfield with cow bells as big as her head!

MAGNESIUM SUPPLEMENTATION CAN BE TRICKY

Even when it seems obvious that magnesium supplementation is called for to alleviate typical deficiency symptoms such as anxiety or heart palpitations, finding the best means to raise intracellular levels can be difficult. Most often, oral supplements will cause laxative effects at levels too low to restore magnesium supplies to the cells, where it is needed. Marina, whose husband Alex was recovering from heart surgery, had to be persistent. “I noticed in the hospital that he was given intravenous magnesium during intensive care, but the doctors never mentioned it later on, when Alex was overcome with panic attacks, bouts of low energy, hypertension and arrhythmia. We were offered drugs for all of these conditions, but we both wanted to avoid the medications if at all possible, although we couldn’t at first. A couple of alternative doctors had mentioned magnesium along with other supplements that could help, but with no particular emphasis on the magnesium, so it was by trial and error that we discovered just how effective the magnesium could be. But first we had to find the best way for Alex to take it.

“Capsules of magnesium citrate and magnesium taurate both caused diarrhea at only a quarter of the recommended dose. I learned that chronic magnesium deficiency can unfortunately leave you with a much reduced capacity for intestinal absorption, and it was likely that Alex had been deficient for a long time. This was hard for me to accept at first, since he had been eating a superb diet for many years—full of mineral-rich bone broths, soups with seaweeds and nettles, and no sugar or caffeine. But his history included decades of intense stress and obvious signs of adrenal exhaustion.

“I next tried liquid ionic magnesium, which included trace minerals as found in the Great Salt Lake in Utah. I felt that magnesium in isolation might not be the best way to try to absorb it. Starting with just a few drops in his soup, Alex was able to take more magnesium over time in this fashion, although we still had to be very careful not to exceed a certain amount or the diarrhea would return. Nevertheless, we were starting to see positive results. First came better sleep. Alex had been waking every ninety minutes during the night—he’d get up to pee, come back to bed and struggle to fall asleep only to wake again in ninety minutes to repeat the process. He was certain his prostate was failing, but after about a month with the ionic magnesium, he was able to sleep uninterrupted for three-, then four-, then six-hour spans. We realized his prostate was fine, but his traumatized adrenals had been regularly firing an adrenaline rush to jolt him awake. When they began to be pacified his sleep finally became restful; he now usually only wakes once during the night and can easily return to sleep. And, dare I say, he sleeps better these days than he has for years. Also, with a good night’s sleep his daytime energy level is much improved.

“Alex still had bouts of arrhythmia which had been very frightening at times, and although his hypertension was improving with energy work and flower essences, we knew there was a nutritional component that needed to be addressed. A friend happened to suggest using homeopathic magnesium to help with absorption—she herself was starting to use magnesium supplements and was also experiencing the common problem of loose stools when this solution dawned on her. The concept was brilliant—we needed a way to gently get the cells to accept the magnesium, and so we began using the tissue salts *Magnesia phosphorica* in the 6X potency. After the very first dose Alex had improvement with his stool and was able to keep up the same dosage of the ionic magnesium. It was as though a key had opened a lock, and the magnesium was now entering the cells where it could do its good.

“One day Alex casually mentioned that he hadn’t had a single moment of arrhythmia in a week. This was stunning news, since he had had at least slight arrhythmia daily for months. Everyone told us this was extremely common after heart surgery and we thought we’d have to accept this fact. Encouraged by his progress, I next purchased some magnesium ‘oil’ in order to have yet another means to deliver the magnesium without involving the intestinal tract at all.

“Our current protocol includes a once-daily use of the magnesium oil. I add ionic magnesium drops to our drinking and cooking water, as well as to every pot of soup, pan of sautéed vegetables, tray of stuffed peppers. I call this ‘micro-dosing’ and it is in addition to using sea vegetables and plenty of bone broths. Along with the *Magnesia phosphorica*, Alex takes the tissue salt *Kali phosphorica* (potassium phosphate) which is indicated for all conditions of nervous debility; the two together make a very good heart tonic. At bedtime, Alex has a single dose of magnesium citrate with a food-complex vitamin C powder. This is a relaxing evening ritual and now causes no intestinal upset.

“The only medication Alex still takes is a beta-blocker for hypertension—a small dose that we hope to be able to quit soon. If you supplement with magnesium and have hypertension you will need to pay close attention to your blood pressure. You will have to reduce your medication accordingly or your blood pressure could get too low too fast! You must do this slowly, though, to give the vascular tissue time to recondition itself and regain elasticity—as it will.

“Finally, Alex himself wanted me to add that the magnesium therapy allowed him to shift the intensity of his focus from his physical condition to his spiritual life, and sparked new creativity. He has begun to write and will be publishing the first in a series of his memoirs early next year. Truly, who would have thought so much healing could be initiated by finally replenishing this neglected mineral?”

Skin Deep

Nutrition for the Skin

By Sally Fallon Morell

The skin is the largest organ system in the human body, accounting for 16 percent of total body weight and covering sixteen to twenty-two square feet of surface area. Our skin separates and informs us with regard to our surroundings, serving to waterproof, cushion and protect the deeper tissues, excrete wastes and regulate temperature. In humans, the skin additionally provides vitamin D synthesis. Our skin is also the attachment site for sensory receptors to detect pain, sensation, pressure and temperature. Thus the skin serves both neuro-sensory and metabolic functions.

Human skin is different from that of the animals in that it lacks a covering by fur, feathers, horny plates, leathery coatings, spines, quills, horns, manes or tufts of hair—humans are naked. Similarly, humans have a relatively simple digestive tract compared to animals. The “disk space” dedicated to a complicated digestive tract and luxuriant or protective skin coverings in animals is used in humans for the development of the nervous system. As a result, humans need to use their brains to ensure adequate covering for the body and appropriate preparation of their food.

LAYERS

The skin is composed of three distinct layers, the epidermis, the dermis and a lower layer of fatty tissue, usually called the subdermis (also called the subcutis or hypodermis).

The epidermis or top layer of skin provides water proof protection for the body. It is actually translucent, containing no blood vessels. Most of the cells in the epidermis are keratinocytes or horn cells, so called because they produce keratin, a fibrous protein that provides waterproofing. The horn cells are formed at the base of the epidermis and gradually migrate to the surface, where they are sloughed off as skin dander. During this journey, the shape of the cells changes from rounded to flattened. The space between the keratinocytes contains fat lamellae, that is, fat in a thin, plate-like structure.

Interspersed among the horn cells are melanocytes (pigment-containing cells), Merkel cells (associated with sensory nerve endings) and Langerhans cells (which provide immune protection). Hair and pores allowing the release of sweat and oil pass through the epidermis from the dermis.

The dermis is the middle layer of skin, composed of loose collective tissues such as collagen with elastin arranged in a diffusely bundled and woven pattern. These layers serve to give elasticity to the skin, allowing stretching and conferring

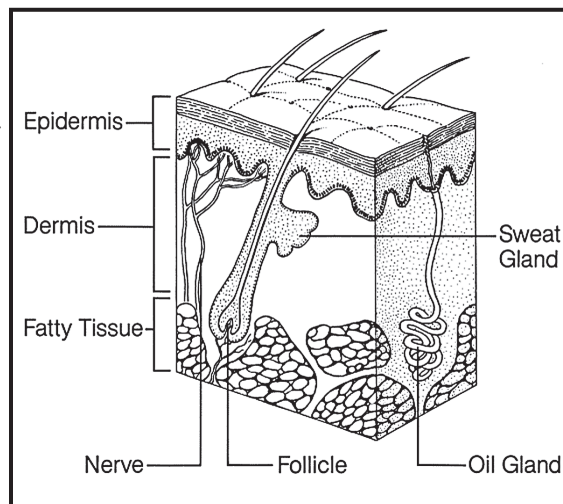
flexibility, while also resisting distortions, wrinkling and sagging. The dermal layer provides a site for the endings of blood vessels and nerves. A corrugated line of blood vessels called papillae separates the dermis from the epidermis. Sweat glands and hair follicles (roots) with their associated sebaceous glands originate in the dermis.

Below the dermis is a layer of connective and fatty tissue, sometimes referred to as the subdermis. Its physiological functions include insulation, the storage of energy and anchoring of the skin.

IN AND OUT

The skin is the main organ for regulating human body temperature somewhere between 98 and 100 degrees Fahrenheit when the ambient temperature varies between approximately 68 and 130 degrees.

Body temperature is fundamentally regulated by neural feedback mechanisms, which operate primarily through the hypothalamus. The hypothalamus contains not only the control mechanisms, but also the key temperature sensors. Under control of these mechanisms, sweating begins almost precisely at a skin temperature of 98.6 degrees F and increases rapidly as the skin temperature rises above this value. The heat production of the body under these conditions remains almost constant as the skin temperature



risks. If the skin temperature drops below 98.6 degrees, a variety of responses are initiated to conserve the heat in the body and to increase heat production. These include vasoconstriction to decrease the flow of heat to the skin; cessation of sweating; shivering to increase heat production in the muscles; and secretion of norepinephrine, epinephrine and thyroxine to increase heat production

While the skin provides our bodies with a barrier, it is also absorbent.

SURPRISING FACTS ABOUT THE SKIN

- The formation, growth and sloughing off of the horn cells takes place in twenty-eight days—one moon cycle.
- The skin produces 10 grams (2 teaspoons) of dander per day. The fine flakes of skin make up a large proportion of house dust, which is eaten by dust mites.
- Distribution of sweat glands varies depending on the area of the body. There are 55 per square centimeter on the back, 155 per square centimeter on the belly, 375-425 per square centimeter on the palms of the hands and 751 per square centimeter inside the elbows. In all, two million sweat glands produce about one-half liter of sweat per day without any awareness that we are sweating. Major physical effort and a warm environment can increase sweat volume to as much as ten liters per day. Sweat contains all the compounds in urine, but in lower concentrations.
- The skin contains about 300,000 sebaceous glands, which together release up to three grams of sebum—an oily, waxy substance—per day. The sebum plus sloughed off horn cells create a protective coating on the skin.
- The hair on the head grows about one millimeter in three days and a fingernail grows one millimeter in twelve days.
- The skin does not “breathe” in the sense that the lung breathes; nevertheless, the skin takes in 1.9 percent of the oxygen and gives off 2.7 percent of the carbon dioxide converted in the organism as a whole.

SKIN PROBLEMS: AN ANTHROPOSOPHICAL VIEW

Anthroposophical medicine is based on the teachings of Rudolf Steiner, the Austrian mystic and philosopher. According to Steiner, health comes about through a balanced rhythmical activity or movement between what he called the nerve-sense pole and the metabolic pole. The two main skin conditions—dermatitis and psoriasis—represent these polar opposites, the former manifesting as an over-reaction of the nerves and the latter manifesting as an over-reaction of the blood or metabolism.

Dermatitis—also called neurodermatitis, eczema or atopic dermatitis—refers to reactions that present as skin inflammation, often accompanied by inflammation of the mucous membranes of the respiratory tract and eyes, hay fever, allergic conjunctivitis and asthma.

Skin with a tendency to neurodermatitis is dry and often sallow and dull. Water is not well retained in the skin, the sebaceous glands produce less sebum and the sweat glands less sweat, symptoms, “suggesting a loss of constructive powers in the skin.” Sweating induced by heavy work, as well as baths and showers, may cause itching, as does wool clothing.

Normally the skin, with its careful balance of nerve and blood, reacts to these stimulants by increasing blood flow, making it warm. But the skin of people with a tendency to develop neurodermatitis will react one-sidedly in the nerves, that is, with itching. Sufferers may be extremely sensitive to nickel and compounds in cosmetics and skin care products.

Normal skin produces a red line in reaction to a blunt fingernail across the skin; but those with neurodermatitis produce a white line, a sign of the nerves overreacting. Nerves supplying the musculature of blood vessels in the skin cause the muscle fibers to contract; the vessels narrow and a narrow line on either side of the line made by the nail has less blood supplied to it. This causes the skin to turn white.

People who suffer from neurodermatitis tend to be “nervy” and hyperactive. The skin is excessively awake and overreacts, leading to inflammation. Reduced circulation in the hands and feet—cold hands and feet—and inability to tolerate bright sunlight are common in those with a tendency to neurodermatitis.

It is often intelligent people who tend to develop neurodermatitis. Their neurosensory system has been wide awake from birth, and so they have taken in much of the world around them. This has helped their powers of observation and thought from the beginning. . . This kind of intelligence does, however, quite often tend to be somewhat one-sided. The emphasis is on the head, the intellect, tending to be very much of this world, and one-sidedly reacting rapidly to sensory perceptions. Yet their own bodies are often felt to be something foreign.

An inner life where the emphasis is on the head can lead to brooding too much about oneself and strict self-control. They may be interested in computers and technology—children with dermatitis often benefit from art, dance and outdoor activities that get them away from the computer. Those who suffer from neurodermatitis tend to be tall and thin and to have a weak digestion.

Those with psoriasis tend to have an overactive metabolism. Under the microscope, a skin sample from a psoriatic lesion shows greatly elongated papillae in the upper dermis, with the extended capillaries filled to the limit with blood. Blood serum seeps from the capillaries; the dermis is filled with inflammatory cells, which migrate to the epidermis and collect in tiny lakes of pus. The horn cells mature too quickly and incompletely, completing their cycle in three or four days instead of the normal twenty-eight. The most common psoriatic lesion is a sharply defined and thickened red plaque in the front part of the knees and on the elbows—exactly the opposite position of the typical atopic rash, which develops in the inner side of the joint.

People suffering from psoriasis often show other irregularities in metabolism, such as elevated levels of uric acid, blood lipids and blood sugar. They tend to be sturdily built, with a tendency to put on weight. Psoriasis patients have double the risk of vascular disease compared to those without the disease (*Archives of Dermatology*, June 2009). They are tolerant, sociable and able to cope with mental stress, highly active with a tendency to impatience, often successful in their occupation. “Anything they do succeeds, and as soon as it is done they move on to the next thing, literally eager to move on.”

John Updike the American writer, suffered from psoriasis. He devoted a whole forty pages in his memoirs to a description of his condition. His creativity and relentless desire to produce, he said, was nothing but a parody of the painful overproduction in his skin.

Adapted from *Healing the Skin: Holistic Approaches to Treating Skin Conditions. A practical guide based on anthroposophic medicine*, by Leuder Jachens.

Substances placed on the skin can penetrate into the underlying tissue and eventually reach the blood stream. Thus topical skin preparations, vitamin-containing oils, Epsom salts baths and other traditional topical skin treatments work by providing nutrients via the skin rather than through the digestive tract. Many toxic substances can also penetrate the skin.

What determines whether a substance will penetrate the skin is the molecular weight of the substance—the skin will keep out molecules of a larger molecular weight. Water soaking of skin enhances penetration several fold. Many skin preparations contain hydrating substances that increase the absorption of healing or fortifying compounds, or of toxic ingredients.

The fact that substances can be absorbed through the skin is good reason to avoid topical treatments containing hormones or steroids. These can make their way into the blood stream and cause serious side effects.

VITAMINS FOR THE SKIN

Like any other organ of the body, the skin requires the nourishment of vitamins and minerals from food—first and foremost for skin health are the fat-soluble vitamins A and D. Rough, dry and prematurely aged skin is a telltale sign of vitamin A deficiency, which often first manifests as rough, raised skin on the back of the arms. Vitamin A is critical to the repair process, including repair from sun burn and damage from toxins. Vitamin A increases the thickness of the epidermis, especially the granular layer (the portion of the epidermis that produces horn cells).

In clinical trials, oral vitamin A has been con-

sistently effective against a variety of skin conditions, except for inconsistent results with psoriasis.¹ In these trials, patients received very high levels of synthetic vitamin A; it would be interesting to repeat these trials using moderate doses of natural vitamin A plus vitamin D from cod liver oil.

In fact, in 1981, a group of dermatologists from Memphis, Tennessee wrote the following letter to the *Journal of the American Academy of Dermatology*: “We have been impressed by the apparent beneficial effects of . . . cod liver oil on a small group of patients with varied disorders of keratiniza-



tion. Our interest in this agent was around when a 14-year-old girl with very extensive juvenile pityriasis rubra pilaris [red, thickened plaques] appeared to improve concomitant with the use of cod liver oil orally.

“We have noticed improvement in three patients who had lamellar ichthyosis [scaly skin, in which layers fall off, considered a genetic condition] and in one each with Darier’s disease [dark, crusty patches on the skin, considered hereditary] and pityriasis rubra pilaris treated with two tablespoons of cod liver oil daily. The improvement was slow, taking weeks or months, as has been

reported with oral retinoids, but these patients had been previously refractory to other forms of conventional therapy. The condition of three of the patients deteriorated when therapy was discontinued and then improved when the therapy was reinstituted. . . .”²

These findings are backed by numerous testimonials we have received about the resolution of skin problems—from infant eczema to severe psoriasis in adults—with cod liver oil, often, in the case of adults, at very high doses. Cod liver oil should be considered the front line remedy for skin problems, from eczema to psoriasis.

Severe acne is found in those with low levels of vitamin A in the blood.³ The standard conventional treatment for acne is Accutane, a synthetic form of vitamin A, but cod liver oil and other vitamin A-rich foods can work just as well, without the side effects, such as joint pain, hair loss, low energy, depression and aggressive behavior.

Vitamin D is a major contributor in the process of skin cell metabolism and growth, which may explain why skin texture improves after a sunbath.

ALLERGIES AND THE ANTHROPOSOPHICAL LIFESTYLE

A fascinating study published in *The Lancet* provides information on how to avoid dermatitis in children. Researchers compared a total of 675 Swedish school children, half of them from Waldorf schools and half from conventional schools in the same area. They found that those with an “anthroposophical lifestyle” had fewer allergies and skin problems than those in the other group. Those with an “anthroposophical lifestyle” were characterized by the following:

1. They were given far fewer antibiotics and fever-reducing medicines and fewer vaccinations.
2. They had experienced more infectious diseases, such as measles, German measles and chickenpox.
3. They had eaten a more “ecological” diet, especially lactic-acid fermented vegetables.

The study points to one of the dangers of vaccinations—heightened allergic reactions—as well as to the importance of allowing children to suffer from fevers. Lacto-fermented vegetables support intestinal health, so intimately associated with the health of the skin.

Source: *The Lancet*, May 1999

Vitamin D taken orally and applied topically is helpful in the treatment of psoriasis, itching and scaling.⁴

One product of vitamin D in the body is cathelicidin, which is the body's main endogenous antibiotic, with anti-bacterial, anti-fungal and anti-viral properties. Cathelicidin deficiency predisposes to certain types of eczema.⁵

Vitamin E is a powerful antioxidant that can reduce the effects of sun exposure on the skin, as well as the effects of dangerous free radicals. Deficiency of vitamin E is also associated with acne.

The fat-soluble vitamins work topically as well as orally—a fact borne out in scientific studies, clinical experience and folk medicine. The application of vitamin A to the skin for just seven days was found to increase collagen synthesis and collagen-making enzymes, while reducing the levels of collagen-degrading enzymes. The benefits were seen in both normal skin and skin damaged by excess sun exposure.⁶ Vitamin A applied externally can help clear up impetigo, boils, carbuncles and open ulcers and helps repair wounds faster. A treatment using injections of vitamin A has proved effective in the removal of plantar warts.⁷

A study with rats shows that vitamin D can be absorbed through the skin. Researchers applied vitamin D preparation to the shaved skin of vitamin D-deficient rats. Blood levels were tested after two hours and shown to be higher.⁸ The vitamin D could only have entered the bloodstream through the skin. It is safe to assume that vitamin A is also absorbed through the skin, thus making cod liver oil a good choice for topical treatment.

The water-soluble vitamins also play important roles in the health of the skin, particularly vitamin B₅ (pantothenic acid), vitamin B₁₂ and vitamin C.

MINERALS AND THE SKIN

Magnesium deficiency stimulates the release of histamine from the mast cells. As a result the person becomes prone to allergies including eczema.

In order to metabolize one molecule of glucose, we need at least twenty-eight molecules of magnesium; thus eating sugar and refined carbohydrates can have detrimental effects on the skin. Nuts, whole grains, bone broths and unrefined salt are our best sources of magnesium.

Other minerals that play key roles for skin health include zinc, iron and selenium. Zinc deficiency is associated with acne because zinc helps control the production of oil in the skin. It is also a co-factor for vitamin A utilization. Good iron status supports a rosy glow in the cheeks. Selenium supports tissue elasticity and protects against free radical damage. Red meat, liver and seafood are our best sources of these vital minerals.

PROTEINS AND THE SKIN

Healthy skin depends on complete protein from animal products. In fact, the detrimental effects of a vegetarian diet often first show up as sallow, unhealthy looking skin.

Especially important to skin health are the sulphur-containing amino acids cysteine and methionine. Methionine is considered an essential amino acid; while cysteine is not. However adequate intake of both sulfur-containing amino acids is very important to the health of connective tissue, joints, hair, skin and nails. These amino acids are also utilized by the body in detoxification reactions, helping the body to excrete heavy metals and keeping the skin clear. Cysteine is found in the protein called beta-keratin which is the main protein in nails, skin as well as hair. Not only is it important to collagen production but also helps in the skin's elasticity and texture. The best sources of these proteins are meat (especially pork), eggs and dairy products.

Two other proteins that support skin health are proline and glycine, the two proteins that make up gelatin. These two proteins are critical for building healthy cartilage, as well as for detoxification.

Proline has been recommended as a supplement that might benefit people interested in soft,

Since conventional theories single out saturated fat as contributing to cancer, heart disease and almost every other ailment under the sun, university researchers and politically correct nutrition writers naturally also assert that saturated fats are bad for the skin.

PIG SKIN SOUP

The most talked about New York restaurant opening in 2008 was a Japanese restaurant called Hakata Tonton, where thirty-three of the thirty-nine dishes contain pigs' feet. Pigs' feet are rich in collagen, the protein responsible for skin and muscle tone. "Collagen helps your body retain moisture," says the owner, Himi Okajima, who has introduced a chain of restaurants specializing in collagen cuisine in Japan. "Your hair and skin will look better, but it's not just for looking beautiful now. If you begin eating collagen in your thirties, you will look younger in your forties" (Telegraph.co.uk, March 3, 2008).

To make pig skin soup, simply place some pigs feet (with the skin on) or a generous amount of rind from bacon or ham into a pot of cold water. The water should just cover the pigs feet or rind. Add a splash of vinegar and bring to a simmer. Simmer at least 24 hours, or until the skin and/or rind is falling apart. You can strain the broth and drink in a mug, or chop up the rind and meat (discarding the bones) and then blend with a hand-held blender to make a thick soup. Thin the soup to desired consistency with water, stir in some cream or crème fraîche and season to taste with sea salt.

Of those who admitted to being on a diet high in polyunsaturated oils (more than 10 percent of the diet), at least 78 percent showed marked signs of premature aging of the facial skin, with some appearing more than twenty years older than they were.

non-sagging “youthful” skin.⁹

Glycine is not only needed for healthy cartilage, but also helps digestion by enhancing gastric acid secretion. According to the late Robert Atkins, MD, “A lack of stomach acid is commonplace, the result of aging, genetics, use of certain medications and a variety of other factors.” Dr. Atkins contends that the inability to properly digest protein contributes to numerous health problems including skin conditions like psoriasis, vitiligo, hives, eczema, dermatitis, herpetiformis and acne.¹⁰

FATS AND THE SKIN

Since conventional theories single out saturated fat as contributing to cancer, heart disease and almost every other ailment under the sun, university researchers and politically correct nutrition writers naturally also assert that saturated fats are bad for the skin.

A 2001 survey, published in the *Journal of the American College of Nutrition*, cites butter as a food that contributes to wrinkles.¹¹ The researchers measured skin wrinkling in over four hundred fifty subjects and correlated skin damage with food items taken from food-and-nutrient-intake questionnaires. There were four groups: Greek-born subjects living in Melbourne; Greek subjects living in rural Greece; Anglo-Celtic Australian elderly living in Melbourne; and Swedish subjects living in Sweden. Lower amounts of skin damage were associated with higher intake of vegetables, fish and legumes and with lower intakes of butter, margarine, milk products and sugar products.

Nicholas Perricone, MD, the New York dermatologist, made these confusing findings even more confusing in his book on skin care, *The Perricone Prescription*, lumping *trans* fats with saturated

fats. “Saturated fats. . . which are solid at room temperature, include vegetable fats, such as Crisco or shortening, and animal fats, such as butter and lard. . . . Research has shown that the wrong types of saturated fats can have a strong inflammatory effect on the body. To avoid proinflammatory, proaging responses, you must limit your intake of red meat. . . to one serving per week.” Animal fats, including butter, also contain arachidonic acid, which Perricone insists has a pro-inflammatory effect, leading to skin damage and wrinkling.¹²

To be fair, in a separate passage, Perricone does also condemn vegetable oils, including *trans* fats, but the false association of animal fats, which actually suppress inflammation, with *trans* fats, which cause inflammation, infuses the entire book, including the collection of recipes, which feature chicken and fish, lowfat dairy products and olive oil. To his credit, he warns against sugars and refined carbohydrates, but it may be hard to resist the temptation to consume these foods since your body will need them to produce saturated fats in the absence of saturated fats in the diet.

The wrinkling study published in the *Journal of the American College of Nutrition* was an epidemiological survey, and such surveys can only show associations, not prove causes. Since butter consumption was lumped with consumption of margarine, milk products (likely pasteurized milk products) and sugar, it is inappropriate to single out butter as a cause of wrinkling. In addition, the group that showed the most skin damage was the Anglo-Celtic Australian elderly living in Melbourne, certainly the subjects most likely to show wrinkling because of their age and the exposure of their fair skin to the harsh sunlight of Melbourne, Australia. This is also the group most

SUNSCREEN? PLEASE THINK TWICE

Pick up an article on keeping healthy and it will almost always recommend a generous application of sunscreen to “protect” the skin. This trend has become so widely accepted that some people wear sunscreen every day, even in winter, and slather their children with it before they get dressed, just in case they may come in contact with that dreaded, unnatural substance: sunlight.

The list of questionable ingredients in sunscreens include benzophenones (dixoybenzone, oxybenzone), PABA and PABA esters (ethyl dihydroxy propyl PAB, glyceryl PABA, p-aminobenzoic acid, padimate-O or octyl dimethyl PABA), cinnamates (cinoxate, ethylhexyl p-methoxycinnamate, octocrylene, octyl methoxycinnamate), salicylates (ethylhexyl salicylate, homosalate, octyl salicylate), digalloyl trioleate, menthyl anthranilate and avobenzone.

Some of the chemicals have been implicated as causing thyroid problems. German researchers found that rats exposed to the sunscreen chemical 4MBC had raised levels of thyroid stimulating hormones and heavier thyroid glands. Another chemical, benzophenone 2, was found to alter thyroid hormone levels, although the effect was reversed by other chemicals present in sunscreens (BBC News, June 10, 2006).

In most situations, normal exposure to the sun is beneficial, not harmful, especially if you take care to avoid polyunsaturated oils and *trans* fats. If you are fair-skinned and find yourself in situations where long exposure to the sun is unavoidable, be sure to cover your torso with a shirt, wear a hat and use a safe sunscreen like zinc oxide on your nose and cheeks.

likely to consume butter rather than olive oil, hence the association of butter with wrinkling.

The type of fats most definitely associated with wrinkling are the industrial, polyunsaturated oils, the types of oils that those wanting to avoid saturated fats are most likely to consume. In a study on premature aging carried out in conjunction with the Research Foundation for Plastic Surgery in Los Angeles, dermatologists looked at more than one thousand patients over a two-year period. Researchers looked for any pathological evidence that the subjects had grown old prematurely, especially manifesting in the skin of the face. In each patient, the researchers noted the degree and amount of wrinkles such as crow's feet and frown lines, skin turgor or firmness, color, elasticity or resilience, condition of the hair and many other factors to attain a preliminary score. Points were deducted from the total "aging" score if the patient had been exposed to a great deal of x-rays or sun, if one or both parents looked prematurely aged, if dentures were worn or if the patient suffered from any form of water retention. Subjects also took a dietary survey to discover whether they had changed their diet to stress polyunsaturated oils, to what extent and for what reasons.

When all the possible contributory factors in premature aging of the skin were noted, the researchers computed a final score and compared it with the patient's chronological age. The result: of those who admitted to being on a diet high in polyunsaturated oils (more than 10 percent of the diet), at least 78 percent showed marked signs of premature aging of the facial skin, with some appearing more than twenty years older than they were. When this group was compared to an almost equal number who made no special effort to consume polyunsaturates, the difference was profound. Only 18 percent of the latter group were judged to have outward physical signs of premature aging. In other words, there were more than four times as many people who looked markedly older than they really were among those who deliberately included large quantities of polyunsaturated oils in the diet.¹³

Another important fat for the skin is arachidonic acid, which Dr. Pericone and others finger as an inflammatory fat because it is the precursor to the prostaglandin PGE₂, considered a pro-inflammatory tissue hormone. But PGE₂ stimulates the formation of gap junctions and tight junctions, which are

protein-based connections between cells, both in our external skin and in our digestive tracts. These connections regulate the permeability of the skin barrier, strengthening it against environmental assaults and preventing excessive water loss through the skin.

In animals with dermatitis induced by essential fatty acid deficiency, only arachidonic acid fully cures the condition. Arachidonic acid works in concert with the elongated omega-3 fatty acid DHA found in cod liver oil, making butter and cod liver oil an ideal combination for beautiful skin.

What about the premise that arachidonic acid causes inflammation? The conversion of arachidonic acid to PGE₂ in immune cells is an important initiator of inflammation, but it also works to resolve inflammation. However, too much EPA, an omega-3 precursor to DHA, can interfere with arachidonic acid's ability to turn off inflammation. EPA is found in high amounts in fish oils and also in cod liver oil—so use cod liver oil sparingly in the context of a diet rich in arachidonic acid from butter, organ meats and meat fats, and avoid fish oils altogether.¹⁴

DIGESTION AND THE SKIN

The health of the skin and the gut are intimately linked; after all, the lining of the gut is a special type of skin, requiring the same nutrients as our external skin—zinc and vitamin D, for example, are the key nutrients for supporting a healthy gut barrier. And a healthy gut is lined with a biofilm made up of billions of beneficial bacteria, just as healthy skin is home to a variety of bacteria, most

HOLISTIC REMEDIES FOR SKIN PROBLEMS

The following is a compendium of remedies gleaned from our files. Some have been tested in clinical trials, others proved useful in individual cases.

ACNE: Acne has been linked to deficiencies of vitamins A and E in several studies. Avoid polyunsaturated oils, which use up vitamin E. Cod liver oil is a must; in some cases, high doses of water-soluble vitamin B₅ (pantothenic acid) have been helpful. Bone broths and lacto-fermented foods help fight infection in the gut and will reduce the manifestations of that infection on the skin.

BOILS: Apply Ichthammol Ointment 20%, available from pharmacies. The active ingredient is ammonium bituminosulfonate, a product obtained through dry distillation of sulfur-rich oil shale. The ointment works by thinning the skin and has the advantage of being mildly antiseptic.

BITES: Take cod liver oil and vitamin C plus herbs to support adrenal function, such as licorice and nettle, and dandelion root and milk thistle to support liver function. topically apply papaya fruit or raw liver.

BURNS: Apply cod liver oil to the burned area. This works well on first and second degree burns, often overnight, in miraculous fashion. Cod liver oil will also reduce the tendency to scar. For severe burns, use B & W Ointment, an Amish formulation containing honey, lanolin and various healing herbs, available at betterthangreens.com.

ECZEMA: There are many suggested topical treatments for this irritating and often persistent condition including Boericke & Tafel Psoriaflora cream, California Calendula cream, Weleda Calendula Essence, a Chinese pentaherbal formula, baths in Dead Sea salts, and a mixture of cod liver oil and evening primrose oil applied to the rash. Adrenal and liver support includes Drenatrophin and Cataplex C from Standard Process, Rhodiola Complex from Mediherb and Milk Thistle Complex from Progressive Labs. One eczema sufferer reports that taking cod liver oil alone did not clear up chronic eczema, but with cod liver oil plus butter oil, it cleared up completely.

INFECTED WOUNDS: Raw pork fat applied to the wound is the remedy of generations of farmers; Native Americans used rendered bear fat.

ITCHINESS: Itchiness from rashes, bug bites, stings, poison ivy and other poisonous plants responds well to swabbing with noni juice. Plain old witch hazel extract, such as Thayer's, works well and is cheap.

KERATOSIS PILARIS: "Sand paper" bumps, most frequently on the back of the upper arms, appear when keratin forms hard plugs within hair follicles. This is a classic sign of vitamin A deficiency. In addition to taking cod liver oil orally, mix cod liver oil with evening primrose oil and rub on the affected area. Avoid soaps and shampoos containing sodium lauryl sulfate.

PSORIASIS: This difficult condition responds well to treatment with UV light. In his readings, Edgar Cayce recommended American saffron tea for all cases of psoriasis. Steep tea in hot water and allow to cool, then strain and sip on an empty stomach. The tea is said to heal intestinal lesions that allow poisons to travel to the skin.

POISON IVY: Homeopathic *Rhus tox* can alleviate itchiness. Topical treatments include tea tree oil, cod liver oil and Burt's Bees Poison Ivy Bar soap. After exposure, wash well with an oily soap called Tecnu. Native Americans built up immunity by eating the small emerging poison ivy leaves in the spring. Some have reported good protection by consuming raw milk from goats eating poison ivy.

RINGWORM: Treat topically with a preparation of jewel weed or salvia. Consume coconut oil for its anti-fungal effects.

ROSACEA: Rash-like redness, usually of the face. One theory holds that the condition is caused by lack of hydrochloric acid; therefore taking HCl with meals may help. Avoid coffee, alcohol, hot beverages, spicy foods. A skin mite called *Demodex folliculorum* is considered a causative factor. Researchers were able to infect the skin of riboflavin-deficient rats with the Demodex organism, but not the skin of normal rats. Thus, supplementation with riboflavin, along with the whole B complex, may help.

SHINGLES: An herbal combination containing hops, valerian root and passion flower alleviates shingles pain. A combination formula, called HVP, is available from Nature's Sunshine. One tradition suggests raw apple cider vinegar, taken several times per day in water. Coconut oil, coconut milk and coconut water kefir can help eliminate outbreaks and keep those that do occur to a minimum.

SKIN CANCERS (NONMALIGNANT) AND ITCHY MOLES: Ointment containing chickweed.

SUNBURN: An American tradition is to apply lard to sunburn; in India, sunburn is treated by washing or swabbing with cold raw milk. For promotion of tanning and prevention of sunburn, apply coconut oil to wet skin frequently while sunbathing.

TICK REMOVAL: Apply a glob of liquid soap to a cotton ball. Cover the tick with the soap-soaked cotton and swab it for about twenty seconds. The tick will come out on its own and will stick to the cotton ball when you lift it away.

VITILIGO: Vitiligo is a chronic disorder that causes depigmentation of patches of skin, often first provoked by sunburn. The white patches occur when melanocytes, the cells responsible for skin pigmentation, die or are unable to function. The main alternative treatment involves the Chinese herb *Psoralea corylifolia*, or other Chinese herbal combinations. One theory holds that the condition is a sign of B₁₂ deficiency.

WARTS: Make a paste of DMSO and crushed aspirin. Apply to the wart and cover with a bandage. Leave in place for several days. This treatment may require two applications, three months apart.

of them beneficial.

When undigested proteins, pathogens and toxins pass through the gut—which happens constantly in those with poor gut integrity, the so-called “leaky gut”—they can no longer be eliminated through the feces, and must be vectored to our back-up organ of elimination, the skin. Recovery from rashes and skin lesions often calls for a very restricted diet, such as the GAPS diet, along with cod liver oil, plenty of butter, gelatinous bone broths and lacto-fermented foods needed to restore gut health. As the gut heals, so will the skin.

Proof that gut and skin health are linked comes from studies of infants. Infants with poor intestinal flora often develop eczema. A study from Sweden showed that children with only a limited variety of bacteria in their feces one week after birth more often developed atopic eczema by the age of eighteen months.¹⁵ A diversified intestinal flora seems to be better at stimulating the immune defense. The composition of a child's bacteria flora is dependent on the mother's microflora since she is the primary source for the child's bacteria at the onset. Another clue: acne and other skin problems often show up after a course of antibiotics. If you must take a course of antibiotics, be sure to follow up with plenty of lacto-fermented foods, and possibly a probiotic supplement. This ounce of prevention may prevent a ton of unpleasant skin problems later on.

CARE OF THE SKIN

While many people spend small fortunes on external skin care—creams, potions and facials—healthy skin must start on the inside, nourished by a healthy diet. A diet low in refined carbohydrates and high in animal fats, rich in fat-soluble vitamins and the proteins that support skin and collagen


integrity, is the basic recipe for skin health. Bone broths and stews rich in collagen help make skin thicker and healthier; lacto-fermented foods support intestinal health and gut integrity.

As with every other organ in the body, the skin is adversely affected by refined carbohydrates; likewise coffee, tea and caffeine-containing beverages can cloud the skin's natural glow. Anything that puts stress on adrenal function will also put stress on the many functions of the skin.

As for external care, the best advice is, “Don't wash.” Soap depletes the body's natural sebaceous protection and also removes some of the beneficial microorganisms that inhabit the skin. Scientists are only just beginning to appreciate the role of microscopic life on our skin. They have discovered, for example, that germs inhabiting naturally oily regions, such as the outside of the nose, feed on the skin's lipids and produce natural moisturizers to prevent skin from becoming chapped.¹⁶

Of course it is necessary to wash our hands before treating the sick or handling food, but it is not necessary to soap the whole body, and certainly not the face, in the shower or tub.

Regarding daily skin care, a good rule is not to use anything that you can't eat. Expensive creams are not necessary and may do more harm than good. Instead use coconut oil or extra-virgin olive oil on your face at night-time, and on any areas that may be dry.

The smooth, glowing skin that shines forth in the photographs of Weston Price is the product of good nutrition, not hours spent at the beauty salon. The same dietary principles that support good dental health also ensure vital, vibrant skin. 

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A TOPICAL TREATMENT FOR CANCER

This topical treatment for nasty moles, melanomas and small tumors under the skin uses the aschorotic (scab forming) herb blood root. The treatment may elicit a painful sore with oozing pus, followed by a hard scab, considerable redness and swelling, and even periods of fever; it is therefore not recommended for larger tumors, or for breast cancer.

The treatment involves two salves, a dark salve containing blood root and zinc chloride and a yellow salve containing linseed oil, beeswax and other ingredients. Apply a small amount of the black salve (not more than 1/8 inch thick) to the suspected area, cover with a bandaid and leave for 24 hours. If the spot is indeed cancerous, a sore will form. Thoroughly clean and dry the area before applying the yellow salve, covered by a band-aid. Repeat with the yellow salve for five days, replacing as necessary. On the sixth day, reapply the dark salve for 24 hours and then use the yellow salve for 6 days. Continue this process until there is no more pus or blood and a scab has formed. The scab may remain for several weeks, followed by general redness for several weeks or even months.

To make the dark salve, mix 1/2 cup powdered blood root, 1/2 cup zinc chloride and 1/2 cup whole wheat flour. Add water to make a thick paste and cook for 30 minutes in a stainless steel (not aluminum) double boiler. To make the yellow salve, heat 1 pint pure linseed oil to boiling and then add 1 piece of rosin (used for violin bows) about the size of a walnut. Stir until the rosin is melted. Remove from heat and allow to cool slightly. Stir in 2 ounces beeswax and 1/2 ounce oil of spike (lavender spike oil). Stir well and allow to thicken. Store both salves in small glass jars.

Ask the Doctor

TREATING ECZEMA

By Thomas S. Cowan, MD

Question: *I have had eczema off and on for many years, causing me considerable discomfort, even pain. Conventional doctors seem to have nothing to offer me except steroid creams. Is there a natural solution to eczema?*

Answer: Eczema, Latin for skin rash, is a common and vexing skin disorder that severely disrupts the lives of many people of all ages. The incidence of eczema has been increasing over the past forty years; in fact, it is now considered the most common chronic disease in the pediatric population in the western world. According to western medicine, the pathophysiology—that is, the cause—of eczema is unknown, although the current theories put eczema in the category of auto-immune diseases in this case an auto-immune disease of the skin. (For reference other auto-immune diseases include Hashimoto's which is an auto-immune disorder of the thyroid gland, and rheumatoid arthritis, which is an auto-immune disease of the joints.)

Food allergies have long been suspected to play a role in eczema, although studies of the role of food allergies have shown conflicting results over the years. There is also the question of whether all eczema or skin rashes have the same cause, in that sometimes the skin will be wet and weeping, whereas in other cases the skin is overly dry and cracked. It is unclear whether these are actually the same disease or whether they should be thought of and treated as entirely different illnesses. There is also the question of whether the location of the skin disorder relates to the origin of the illness. Children typically have eczema in the crooks of their elbows, and behind their knees and ears, whereas in the teen years and twenties the eruptions are frequently on the hands and feet, and in older age the eruptions often occur on the legs and arms. All these things are unexplained in conventional medicine and in fact complicate this very difficult situation.


In trying to understand eczema on a deeper level, the first issue to address, as with all allergic and auto-immune diseases, is the fact that the antibodies that cause auto-immune reactions are made against foreign proteins that have found their way into the bloodstream. Whether we are talking about foreign food antigens (food allergies), or auto-immune reactions, the issue is not so much

stopping the toxic skin reaction that results in the eczema, but rather sealing and healing the gut in order to stop the leakage of foreign proteins into the blood stream, either from food or other sources. Healing the micro-flora of the gut, healing the micro-villi of the gut, and stopping the absorption of antigenic proteins is the key to stopping the vicious cycle that results in chronic eczema. All of this points to the GAPS diet (Gut and Psychology Syndrome diet), the modified traditional diet, to start healing the gut and restoring the micro-ecology in our GI tract. From an epidemiological perspective, when we moved away from our traditional diet, with its emphasis on lacto-fermented foods, good fats, bone broths and properly prepared grains, we created the situation that has allowed chronic illnesses like eczema to flourish.

In addition to the GAPS diet as the basis of the eczema treatment, there are some natural medicines that can go a long way to relieve the suffering that often accompanies this disorder. Evening primrose oil has been shown to lower inflammation and often help with skin healing. For small children the EPO can even be rubbed into the skin. The dose of EPO should be 4000 mg per day for 6 weeks, then 2000 mg per day thereafter. The Chinese herbal medicine sophora is an anti-allergy herb that is widely used both orally and as a skin ointment with much success. Allergy Research sells a product called Dermaweed, which contains sophora, and is often very successful in helping to heal eczema. The dose is about three capsules, three times per day for about eight weeks. Fermented cod liver oil, about 1 teaspoon per day should be given to supplement vitamin A, which has been shown to heal the GI mucosa and is valuable in the treatment of a variety of skin conditions. Some people see partial success with the cod liver oil, and complete success in healing eczema when the high-vitamin butter oil is added.

Probitoics and probiotic food should be given, including a daily dose of sauerkraut, and a probiotic such as Biokult, building up slowly to a dose of 1-4 capsules twice per day. Finally the skin protomorphogen from Standard Process, called dermatophin, which blocks the antibodies that eventually cause skin inflammation should be given at a dose of 1-2 tablets three times per day between meals.

Finally, for topical treatment, I cannot say enough about a Chinese herbal formula containing sophora—I have seen bad cases of eczema clear up in just a few days with this product. A member of the pea family, sophora contains a biopolymer called arabinogalactan consisting of two simple sugars, arabinose and galactose. Arabinogalactan functions as a signalling molecule between cells, as well as glue to seal wounds, and may also interact with the immune system in a positive way.

The sophora topical treatment is available from drkangformulas.com. The product is number 49 on the website. The preparation is quite expensive—ten dollars for a small packet—but many find that it is more than worth it in the almost instant relief from itching that it gives. 

Thomas Cowan, MD is a holistic physician in San Francisco, California and the author of The Fourfold Path to Healing. He will be a speaker at Wise Traditions, 2010.

Homeopathy Journal

PSYCHIATRIC SKIN

By Joette Calabrese, HMC, CCH, RSHom (NA)

Marley MacAfee has doe eyes and a temperament to be reckoned with. Some might politely say she's spirited. But may I be frank? Marley has been known to have violent tantrums and can be a destructive drama queen. We're not talking about little anger fits, we're referring to slash-and-burn behavior—the kind of rage that would be grounds for neighbors to call the police. And Marley's only twelve!

But as her parents hasten to say, she wasn't always this way. Her mom can't help but turn this over and over in her mind as to what happened to her little girl. Indeed, she always had a temper, but the rage had lately become pathological. And, as if that weren't enough, Marley began experiencing despair during which she would hole up in her room for days.

Let's examine the timeline in Marley's life that led to her emotional illness. One clue is that around the time Marley became ardently aware of her appearance, things shifted in her conduct. She was embarrassed by her skin because she had always been plagued with eczema. Her mom thought that perhaps Marley was the target of ridicule at school because of her often disfigured skin. Yet, even that hypothesis didn't fit snugly because Marley seemed to have a lot of friends... up until she started her enraged hysterics. No one seemed safe from Marley's venomous temper.

And so because of all this, in spite of Mrs. MacAfee's natural health standards, she took Marley to a dermatologist. Predictably, he prescribed steroid cream. The MacAfees had avoided such resorts because they knew of the reputed long term effects. But within short order after consenting to the cream, Marley's skin was clear for the first time in her short life. A temporary sense of relief visited the MacAfee household.

However, instead of being satisfied with this improvement, shortly after the skin fix Marley

began to exhibit fierce fits of anger. Her parents chalked it up to her burgeoning hormones yet it didn't matter what time of the month it was. . . . Marley was increasingly more demanding, fractious and recalcitrant.

One afternoon Marley's aunt witnessed a disturbing incident at school. There to take her niece shopping for new shoes, she found Marley screaming at the top of her lungs while biting, kicking and spitting at a small group of younger children. She hated to report what she saw but knew it was important for Marley's mom to know. And then she hung her head and sadly added, "She's not right; she ought to see a psychiatrist." Humiliated and troubled, Marley's mom had to agree with the assessment but hesitated, since, "All they do is hand out more drugs."

So, it was only out of desperation and her persevering temperament that Mrs. MacAfee began to read the medical books that her grandfather, a homeopathic physician from England, had left in his library. The revered old books presented a kind of reasoning that no one else offered. One elegant, leather-bound tome contained a chapter on behavior in which two sentences rang like heralding bells of truth. The first read: "Removal of local symptoms results in a heightening of the whole disease." The second: "Almost all mental and emotional diseases are one-sided diseases in which the somatic symptoms have diminished and the mental and emotional symptoms have heightened."

What?! She scrutinized the passages again and again, pulling each word apart. The dermatologist had said Marley's skin was cured; in other words, the skin appeared improved, but according to this medical text, the illness was driven to a deeper state. Were Marley's skin eruptions removed only to be replaced by a deepening of this vile conduct? Could that be the reason for

Almost all mental and emotional diseases are one-sided diseases in which the somatic symptoms have diminished and the mental and emotional symptoms have heightened.

If indeed the drug had driven the illness to a deeper state, then it would make sense to halt its use immediately.

the behavioral problems? Mrs. MacAfee's next thought was, "My God! What have we done?"

She had known that all drugs carry side effects, but to think that this could happen to her daughter and, as Dr. Hahnemann stated in his books, that it was predictable, was an astounding epiphany. If indeed the drug had driven the illness to a deeper state, then it would make sense to halt its use immediately. As she read on, Hahnemann elaborated, "Homeopathic treatments can produce rapid and striking results in cases of mental and emotional disease." "That's it!" she declared, "I'm going to contact that homeopath mom uses on the East Coast."

The phone appointment went just as Marley's mom had hoped. Since Marley was already off the steroids by this time, they had a clean slate to work with. The homeopath reiterated what Dr. Hahnemann had written in his ground-breaking treatise on homeopathic medicine and quoted another statement that also rang true. "Violent allopathic means produce other maladies." Violent? The homeopath explained that anything that

forces pathology to change direction by tinkering with the symptoms is considered violent because, "All medicines alter the mental and emotional state, each in a different way."

The homeopath assured Mrs. MacAfee that if the remedy she chose specifically for Marley was indeed well selected, she could expect changes within a few weeks, but the eczema would likely return. That would be cause for celebration, for as the eruptions returned, the behavior would subside and the old Marley would resurface. Then, and only then, could homeopathy offer the correct stimulus that would allow the skin eruptions to disband.

The first remedy the homeopath chose was *Nux vomica*. She explained that another remedy would need to follow it within a few weeks to continue the work after *Nux vomica*'s action was complete.

Just as expected, Marley's skin did indeed worsen. In fact, it became more prominent than ever, with pustules that enveloped her jaw line. It wasn't easy to witness this development, but

THE LEGACY OF DR. HAHNEMANN



The Hahnemann Monument, erected 1900, Washington, DC. It is the only statue of a physician in the nation's capitol.

When we remove the signs of illness, such as skin eruptions, we will be obliged to suffer a more serious illness. The word "symptom" in Latin means "sign." Hence symptoms are merely the outward manifestations of a more deeply seated imbalance. Had Marley's mom used homeopathy to uproot her eczema from the outset, or given her high-density nutrition to support it, the eczematous skin might well have only been a brief, vague memory. It's the tampering of symptoms of a lesser illness that brings pathology to a thunderous and more serious state. Isn't the logic of nature flawless?

The treatise of Dr. Samuel Hahnemann—the Father of Homeopathy—is still taught in homeopathic medical schools throughout the world, and is the reference in which Marley's mom made her discovery. *The Organon of the Medical Art* stands as a beacon of light directing great medical minds towards an understanding of genuine human health. This book and its previous editions were written in German nearly two hundred years ago, so I reference an annotated edition by Wendy Brewster O'Reilly, PhD. The numbers after each statement indicate the interpreted aphorisms. Here are some of the aphorisms Marley's mom studied:

- "Removal of local symptoms results in a heightening of the whole disease"(202).
- "Removal of local symptoms is a common practice of the old school [modern medicine] because their internal medicines do not cure" (203).
- "All medicines alter the mental and emotional state, each in a different way" (212).
- "Violent allopathic means [drugs] produce other maladies" (38).
- "Find out about the patient's somatic disease before it degenerates into a mental and emotional disease" (218).
- "Homeopathic treatments can produce rapid and striking results in cases of mental and emotional disease" (230).

It is noteworthy to observe that Hahnemann's work is not mere theory but reflects proven laws of human health. These truths have been proven in hospitals, university research, clinics and private practices around the globe. Homeopathy is honored by history, science and a proud standing in the world community of medicine.

Mrs. MacAfee held steadfast, even with Marley's protests. Yet the child seemed to comprehend the importance of this crucial step. In the scheme of things it was certainly better than emotional illness. And as much as they wanted to put soothing emollients on Marley's skin, the old book and homeopath concurred: "Put nothing on it and allow it to liberate the pathology."

In the meantime Marley's complaints became mere whispers in comparison to her earlier outrages. It took about five weeks before her former behavior moderated.

On one occasion only, after the family had returned home from church, Marley threw a spitting fit on the front lawn that was quite embarrassing. Her father took her firmly to her room while her mother made feeble apologies to the neighbors. But this outburst was the last time Marley MacAfee acted like an out-of-control, frenzied, inept child.

After the second consultation with their homeopath, *Causticum* was chosen. A month later, the last vestiges of Marley's eczema disappeared. Like a choreographed *pas de deux* of the intellect and the corporeal, the human body displayed its harmonious response to intelligent prescribing.

Now Marley is free of skin ailments, liberated from the burdens of emotional illness, and her family is able to proudly attend any event.

And too, Mrs. MacAfee is a more learned mom. She recognizes firsthand that it's not the side effects of drugs that are the scoundrels, but the fact that the drugs drive illness to a deepened state, and this is the seed of chronic physical and even mental illness. Marley and her family are more convinced than ever that they will remain drug free. ☯☯

Joette Calabrese, HMC, CCH, RSHom(Na) is a certified classical homeopathic consultant and educator. Her signature philosophy maintains that the blessing of authentic health is not bestowed randomly, but can be achieved through the detailed and systematic method of classical homeopathy in conjunction with the Weston A. Price philosophy. For a FREE 15-minute phone consultation to see if homeopathy is a fit for your health strategy, contact Joette 716.941.1045 or go to www.homeopathyworks.net.

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All Thumbs Book Reviews



Global Censorship of Health Information **By Jonathan W. Emord** **Sentinel Press**

In 1993, two authors named Pearson and Shaw contacted Jonathan Emord, who was then vice-president of the Cato Institute, a non-profit, non-partisan public policy research foundation in Washington, DC. They wanted Emord to represent them in a legal battle involving First Amendment rights against the FDA. Their claim was that the FDA did not have the right to censor scientifically backed claims on supplement labels. All parties involved understood that this was going to be difficult, time-consuming, and expensive. Pearson and Shaw considered the challenge worth the effort. They knew that if we don't have freedom of speech, we don't have freedom.

Not very long after this meeting, Emord was visited by a senior member of the Food and Drug bar, who had impressive credentials and more than four decades of experience. He told Emord that pursuing such a case could not possibly end well and would destroy Emord's career. Emord was impressed, but not in the way intended. If his case really didn't stand a chance, there was no need for this pompous, high-ranking legal expert to waste his time paying him a "courtesy call" when he could just as easily watch the train-wreck from afar. Emord was more determined than ever to move forward.

The case became known as Pearson vs. Shalala. It was brought before the DC Circuit Court and that court ruled in favor of Emord, Pearson and Shaw. So much for the predictions of the pompous expert.

The story, however, did not end there. In fact, what followed is what I would consider the most revealing aspect of the book. About a year after their court victory, Emord was told emphatically by the FDA Chief Counsel's office that "the FDA will never abide by the Pearson decision." Well,

there it is. The FDA officially considers itself above the law and the Constitution. It deems any court decision against it as irrelevant. The censorship continues. Combine this hubris with the FDA's recently stated position that citizens have no right to consume or feed their children any particular food and no right to freedom of contract and we have an instructive window into the mindset of the FDA.

The FDA justifies this censorship in the usual way—claiming they need to protect us from false statements. They know well how to play the safety card over and over. Safety is a mind-control catchword used to relieve the weak-minded of their freedom.

Emord gives us a first rate history of the development of the First Amendment from its European roots to the adoption of the U. S. Constitution. He provides extensive quotes from George Mason, George Washington, Thomas Jefferson, James Madison and others. The debate over adding the Bill of Rights was not so much about whether Americans should be allowed to have those rights but that they were already implicit in the Constitution. The First Amendment went beyond any previous historical precedent in granting full freedom of speech. The federal government was restricted from any type of censorship. The wiser men in the debate understood that such freedom would quickly be lost if not strongly protected. They were quickly proven right when the Alien and Sedition Acts were passed and the First Amendment was already infringed.

Emord wraps up by suggesting we solve this problem with more litigation, legislation, and dismantling of corrupt power structures. I especially like the last method. On the legislation option, Emord doesn't discuss this but I would say that any legislation needs to have some serious fangs. There is no reason to think the FDA will respect new laws any more than the

Continued on page 58

Safety is a
mind-control
catchword
used to
relieve the
weak-minded
of their
freedom.

All Thumbs Book Reviews

The World Peace Diet
By Will Tuttle PhD
Lantern Books

I want to start off by saying something nice about this book. The front cover has a colorful, pretty picture on it. And then there's . . . well, that's about it. Moving on.

The basic premise of this book is that violence against animals leads to violence against people. I will actually agree that people who sadistically abuse animals often fit the pattern that ends in human violence. This author goes further, however, by asserting that any animal-based agriculture is *de facto* violent to animals, and anyone who eats or is in any way an accomplice to animal-based farming will become violent also. Anyone familiar with the scientific method knows you only need one counter example to shoot a theory down. Shooting this one down is almost too easy. The Amish and Mennonites present a major problem for his theory.

At this point a trend is emerging that continues throughout the book. Tuttle repeatedly ignores any inconvenient evidence that does not suit his agenda. He insists that confining animals in any way is an act of terrorism. Confined animals are tormented animals. Therefore, according to Tuttle, since factory farms are evil, veganism is the only dietary solution.

Tuttle never even considers small grass-based, humane farms. As far as I can tell he has never been to a farm anything like Joel Salatin's Polyface Farm. I've been there many times. I've seen chickens that were completely free-range and able to bolt if they didn't like it there. They didn't go anywhere. All the animals there look quite content and happy. However, this option would muddy Tuttle's agenda, so he ignores it.

Tuttle then attempts to add credibility to veganism by claiming it is promoted by major world religions, and he makes several references to Gandhi. True to form, there is no mention of

the fact that while Gandhi tried very hard to achieve pure veganism, he simply couldn't do it. He had to resort to raw goat milk to survive.

Then there is Christianity and we are told that Jesus was a vegan. It is a mystery to me how anyone can make such an assertion when one of Christ's more well known feats was feeding five thousand people with bread and *fish*. Tuttle goes on to insist that the Apostle Paul was not a legitimate, good Christian because he was not a vegan. I'm sure Christians worldwide will be intrigued to learn this.

We next see this incredible, selective scholarship and bias go to work on nutrition basics. We are told about the "myth of complete protein." Tuttle claims that animal fats contain bad *trans* fat. He provides no reference for this "fact" and I doubt he could find one if he tried. He might stumble onto the fact that butter does technically contain natural *trans* fat but it is not the harmful form that he and everyone else warns against. There is no evidence that he knows anything about this distinction, however.

The pattern continues as the author moves on to other specific nutrients. Vitamin B₁₂ is a subject he clearly can't avoid. His claim is that B₁₂ is abundant in the soil and we could get it from plants except for industrial processing methods. If this is true, am I to believe no vegan-oriented farmers out there are willing to produce veggies that are not subjected to industrial cleaning?

Tuttle continues by pointing out that the vegan diet is higher in sixteen out of nineteen nutrients than the Standard American Diet. Now there's high praise. Nutrients that are conspicuously absent from his list include the ones Weston Price found to be so crucial to real health—the fat soluble vitamins A, D and K₂. Tuttle does not say one word about them. I would guess he doesn't dare.

We learn later that testosterone is a nightmare. Come to think of it, I didn't notice much

Continued on page 61



Tuttle never even considers small grass-based, humane farms.

All Thumbs Book Reviews



***The Anabolic Solution for
Recreational and Competitive Bodybuilders***
By Mauro Di Pasquale, BSc, MD, MRO, MFS
MetabolicDiet.com Books, MD+ Press

With a body mass index of around nineteen it would not occur to me to claim any expertise on bulking up, so I don't have much to say about how well the method in this book works. One certainly can't argue with Dr. Di Pasquale's results. The gist of the method involves eating a low carbohydrate diet during the week (five days a week) and eating a higher carb diet on the weekend. Obviously, working out is also a key part of the method. Steroids are not part of the method—good thing. Supplements may augment the program, which are discussed in the book, but the core of the anabolic solution seems to focus on diet.

The book contains considerable discussion about what kinds of foods to eat, especially on the low-carb days. That discussion is actually quite good for the most part. The good doctor is a fan of red meat, dairy, eggs, bacon and healthy animal fat in general. I think he also gets it right on the topic of water—drink when you feel like it, otherwise don't. Don't worry about cookie-cutter recommendations for how much.

If you have a hankering to hulk up and get huge, this program might work for most men and maybe even women. When looking at the protocol from the viewpoint of compatibility with WAPF principles, there are a few problems. While Dr. Di Pasquale is very good on fats in general, in his discussion on butter versus margarine his take on which is better is surpris-

ingly non-committal in light of everything else he says. He got some of his ideas from the book *Fats That Kill, Fats that Heal*, by Udo Erasmus. You can see our thumbs down review of that book on our website. He also seems a little too concerned about cholesterol and not concerned enough about artificial sweeteners.

Even if you do desire to be a massively muscled stud-muffin, you might want to think long term before you dive in. I personally don't think the dietary requirements are too grueling although some might disagree. I think you can maintain this lifestyle if you are really committed to it, but it still requires a lot of work and time that most people don't have. Even more will not have the time or motivation to continue the program indefinitely to maintain their results. If you want to know what happens after you bulk up and then quit the maintenance program, I'm sure you can find recent pictures of a shirtless Arnold out there in cyberspace. Not a pretty sight.

Supplements, as mentioned earlier, are not the central feature of the book but they do get a significant amount of space. Since the full effects of any food or supplement can take a long time to manifest, anything that hasn't been around for at least a few centuries is an experiment. That would cover just about all supplements.

For those who want to look like the Incredible Hulk, this might be the optimum book. For those who just want optimum health, this is not the best source for information. There are enough inconsistencies with Weston A. Price Foundation principles scattered through the book to keep the thumb DOWN.

Review by Tim Boyd

Global Censorship, continued from page 56

old ones. As Emord clearly demonstrated, court reprimands have no effect. Serious jail time is appropriate for high-ranking FDA officials who think they are above the law. Of course they

should be humanely incarcerated and given a diet they are comfortable with; say a good, FDA-approved, soy-based menu. Be that as it may, if we dismantle corrupt power structures we won't have to worry about the FDA any more.

This book gets a big THUMBS UP.

Review by Tim Boyd

All Thumbs Book Reviews

Fad-Free Nutrition

By Fredrick J. Stare M.D., Ph.D. & Elizabeth M. Whelan, Sc.D., MPH
Hunter House Publishers

The authors of this 1999 book, now out of print, get right to work establishing their extensive credentials and fact-based approach in an apparent attempt to impress the reader. Unfortunately, I suspect I've seen more drivel from PhDs than from others probably because the PhDs feel more entitled. They lose even more credibility when they try—immediately in the preface no less—to rationalize their way around the conflict of interest derived from their food industry funding.

Reading on, we find implications that science is up to a vote, and if you are in the minority, you are wrong. One bullet says, “Any tenet that strays too far from accepted wisdom should be suspect.” Their general attitude seems to be that one shouldn't think outside the box, and if one remains obediently inside the box, no thinking is required. So just don't think, period. Wonder what's inside the box? Well, let me tell you.

There are a number of controversial items

that Stare and Whelan would have us believe are really of no concern. The short list includes fluoride, Olestra, bleached flour, margarine (*trans* fats), pesticides, and MSG. Raw milk occupies the number one spot on the list of most dangerous foods. Saturated animal fat like butter is something you should fear inside this box, and you don't really need it anyway if you are over the age of two.

Their reasoning with pesticides, for example, is that there are no dangerous pesticides on the market because the EPA wouldn't allow it. In this box, the omniscience and infallibility of agencies like the EPA and FDA are beyond question. I guess DDT never happened in their little world.

I can see these authors in an episode of the Simpsons being confronted by the infamous Dalai Lama-nade with ingredients like monosodium poisonate and partially de-weaponized plutonium, shrugging their shoulders and saying, “If the FDA allows it on the market, it must be okay.”

Elsewhere in this box we learn that there is no cancer epidemic, it only appears that way because we are living longer than we did a hundred



THE CALL OF THE LAND – AN AGRARIAN PRIMER FOR THE 21ST CENTURY

By Steven McFadden
NorLightsPress

We often hear the claim, touted as a well-established fact, that small organic farms cannot feed the world and we therefore “need” industrial-scale farming. Steven McFadden makes the case that such statements are false. Nearly half the world's food already comes from small-scale farms.

Monocultures and chemical-based farming do not produce more per acre. They in fact use more energy to produce what they do than you can gain from that same produce. Industrial farming may superficially appear to be doing the job of feeding the world but when you look at the consistent trends, you don't have to be too smart to see where it's going.

Industrial methods promote the loss of topsoil, become ever more expensive, and require more inputs, while the remaining topsoil deteriorates to lifeless dust and food quality declines. Even United Nations' scientists have concluded that industrial agriculture has failed.

Industrial agriculture may continue to put on a brave front and act like everything is just fine but its doom is certain. When that day comes (sooner than later, most likely) we are going to need a whole lot more farmers. McFadden documents the increasing numbers of people feeling the call to reconnect with the land they abandoned and provides resources to help those who are looking for a way to do that. THUMBS UP.

Review by Tim Boyd

All Thumbs Book Reviews

years ago. And they have no explanation for why cancer is increasing in children.

The authors assure us that there is no need to be concerned about artificial sweeteners such as sucralose or NutraSweet. Sucralose is the key ingredient in Splenda, and I hear it was originally developed as a pesticide. Since there is no such thing as a dangerous pesticide, there is no worry.

No need to be concerned about GMO foods, either, and if you nevertheless demand GMO disclosure on food labels, you should understand that protecting the sanctity of commercial interests is more important than giving you information.

There is a section at least ten pages long on why irradiation is not only harmless, but good for you. So chow down on that de-weaponized plutonium.

Stare and Whelan claim the evidence against *trans* fat was uncertain at the time they wrote their book. I'm very skeptical of that, but even so,

the National Academy of Sciences clearly stated just a few years later that the only safe level of *trans* fat in the diet is zero. I believe that estimation reflects the general consensus of science today, so the *trans* fat fad is over. This raises an important point, namely that science seems to change its collective mind quite frequently about a lot of things.

When this book was written, the authors could and actually did say that drinking raw milk, along with other freedoms of food choice, is an inherent right of American citizens. I wonder whether their faith in the almighty FDA would be shaken now that, according to the FDA, we no longer have that right. Perhaps it was just a fad.

The point of this book is that fads come and go and they don't work. I certainly agree that this is true with most fads. Weight-loss diets come and go and don't work, so you should stick to the scientific paradigm, which is to eat less and exercise more. Except it looks to me like that doesn't work either. It becomes very hard to distinguish any difference between scientific fads and any other fads. This makes me think: pot ... kettle ... black.

While this book gets a definitive THUMBS DOWN, it is still worth reading as an example of unabashed support for the food processing industry and dinosaur nutritional concepts on their way to extinction.

Review by Tim Boyd

PLEASE DON'T EAT THE WALLPAPER!

by Nancy Irven

Subtitled "The Teenager's Guide to Avoiding Trans Fats, Enriched Wheat and High Fructose Corn Syrup," this little book reminds us that white flour, the chief ingredient in bread, cake, crackers, pasta and thousands of other processed foods, can also be used to make glue for wallpaper. Irven then shocks us with real life examples of student meal diaries—it's a wonder these kids are even alive with their diets of sodas, gum, candy bars, chips, pretzels and breakfast cereals. Irven is a chiropractic physician and her book describes her efforts to help high school students improve their diets. They learn the many reasons to avoid white flour, industrial fats and refined sweeteners; how to read labels; and how to make healthier choices, such as butter, meat, eggs and honey.

The THUMB is UP on this excellent introduction to the dangers of processed foods, although the book is not without flaws. Irvin refers to *trans* fats as "plastic," which is a misinterpretation of "plasticization," a technical term used in the food processing industry to describe treatments that change the characteristics of margarines and spreads. And while praising saturated fats, she argues that marbled steak is not good for us. Overall, however, Irven has accomplished a Herculean task, that of getting the attention of modern teenagers, hellbent for physical degeneration. She provides practical advice and real life examples of beneficial dietary changes that teenagers can actually accomplish, albeit against tremendous odds.

"I'm so very glad that you spent your time to teach my class and me about all these nasty foods we are eating on a daily basis," writes one of Irven's students. "But you didn't leave it there. You taught us even more—by explaining all the healthy foods we could eat and how much they helped." From a modern teenager, that's high praise!

Available on Amazon.

Review by Sally Fallon Morell

All Thumbs Book Reviews

Frugavore

By Arabella Forge
Black, Inc.

Melbourne, Australia chapter leader Arabella Forge combines gardening and chicken-raising basics with practical advice and yummy WAPF-friendly recipes in this little gem of a cookbook. Subtitled “How to grow your own, buy local, waste nothing and eat well,” *Frugavore* introduces modern readers to the fundamentals of peasant cuisine, in which nothing is wasted, every part of the animal eaten, abundance from the garden preserved in traditional ways, and delicious meals prepared from scratch with fresh, local ingredients.

“Many people would like to eat differently,” writes Forge, “but aren’t sure where to start or don’t think they can afford it.” The author takes her readers by the hand and shows them step by step how to shop, how to keep a garden and a few chickens, how to stock a pantry, which fats to use, and how to prepare meals quickly and efficiently. She explains that living frugally does not mean purchasing cheap food, but rather buying the best quality food possible and making the most of it.

Forge describes an exercise in cost comparison in which she took her sister’s family out for a fast-food meal. The total bill for three adults and three children was thirty-five dollars, and the total time expended on the meal was half an hour—the time it took to drive to the restaurant and back. The following week she invited the family to her place for a meal of lentil soup, arugula salad (from her garden) and coconut pudding. Total meal preparation time was one

hour and the cost less than half the cost of the fast food meal—without the sugars, *trans* fats, preservatives and flavorings, all with very expensive health consequences. Any leftovers can go into soup—or fed to the chickens or tossed into the garden compost pile. The notion that convenience food is cheaper is a myth!

And then come the recipes. . . lots of delicious, nutrient-dense, easily prepared dishes that will tempt even the most reluctant cook into the kitchen: cauliflower with bacon, potato and nutmeg omelet, Spanish-style chicken casserole, fish pie, Moroccan rabbit hot pot, oatmeal slice, baked fruits stuffed with ricotta and honey and a brewed pineapple beer! Forge does a lot with a simple oatmeal pastry crust—soaked overnight—and puts a big emphasis on sourdough bread, stock-based soups and raw milk. She explains how to make kefir, curds and whey, yoghurt and curd cheese.

The book contains a discussion on good and bad fats which is refreshingly simple and accurate, along with a section on the benefits of dairy products. Another plus: instructions on how to make your own inexpensive, environmentally friendly cleaning products.

Best of all, the book is infused with the spirit of cheerful can-do. As Forge points out, obtaining your food from farmers, through farmers’ markets, a co-op or CSA, directly from the farm gate or your own garden, and then preparing it yourself, not only supports the local economy, not only costs less, not only provides superior nutrition—it is also a lot of fun.

Frugavore is available in the U.S. through Amazon. Review by Sally Fallon Morell



World Peace Diet, continued from page 57

evidence of testosterone in the writing or style of the book in general. There is so much more I could say, but that wouldn’t be very nice.

The thumb is very DOWN on this book which is packed with sloppy logic full of holes,

the occasional scientific façade, and oft-repeated emotionally charged drivel. If this is one of the better examples of vegan thinking it should stand as a testament to why you do *not* want to sacrifice your brain cells or general health to veganism. I will concede that if everyone in the world adopts a vegan diet, there will be world peace by the time the last one of us drops dead from malnutrition.

Review by Tim Boyd

Tim's DVD Reviews

***Garage Strength:
An Interview with Gary Taubes***
GarageStrength.com

Gary Taubes, author of *Good Calories, Bad Calories*, speaks informally in this video interview about a range of nutrition and diet issues. Much of the discussion focuses on what really causes excess weight gain, including the role of carbohydrates and fats.

The points I consider most interesting are those highlighting the pervasive bias found in science and research. Here Taubes focuses mostly on the bias and pat agendas that hobble nutritional science, but he has studied a broad range of scientific disciplines and found the same phenomenon across the board. Unless you're talking about *trans* fat, for example, there are no conclusive studies showing that dietary fat is the culprit in cancer, heart disease, obesity, etc. Big studies like MRFIT and the Women's Health Initiative (WHI) show no effect. I remember reading quotes from a director of WHI that included terms like "surprised," "disappointed," and "unexpected." These are not terms an unbiased, objective researcher would use. The WHI director even insisted on referring to a lowfat diet as a healthy diet despite the evidence of her own study showing there was nothing particularly healthy about it. Scientists can be so blinded by their biases or agendas that they view these contrary

results with uncomprehending confusion. They seem to think such an event has never happened before. It has, in fact, many times.

There are good scientists. Then there are those of the scientific high priesthood who cling to their dogma and can't comprehend that they might possibly be fundamentally wrong about something like fat. I would say that is, in fact, the most compelling impact of the interview. Based on my personal observations, however, even many well-educated Americans are innocent of the lack of objectivity among the scientific community. Until they wise up, there is little hope of sorting through all the confusion out there.

Taubes provides other examples of scientific delusion, mentioning Ancel Keys and his data-cherry-picking ways. He also points out the lack of evidence that a high fiber diet is essential. The traditional Masai tribes of Kenya ate practically no fiber and yet suffered no constipation.

One more interesting point that runs contrary to conventional wisdom involves vitamin C. Shipwreck survivors and old sailors did not always succumb to scurvy. The ones who ate a lot of crackers (that is, carbohydrates) got scurvy. There is evidence that carbohydrates significantly increase the need for vitamin C.

I'm not qualified to evaluate all of the scientific details presented by Taubes, but apparently neither are many scientists. I do know that what he says is consistent with my personal experience and my low-carb thumb is UP for this one.

Even many well-educated Americans are innocent of the lack of objectivity among the scientific community.

PREPARING WHOLE GRAINS AND LEGUMES
Kitchen Chart by Monica Corrado and Eleanore Marcey

This attractive chart lists all the important grains and legumes along with columns for soaking mediums, soak times and cooking instruction. A sidebar explains why soaking is important, the choice of various soaking mediums, how to make whey and other details. What a great chart for your kitchen wall! Available for \$21 at www.simplybeingwell.com, click on "Bean and Grain Chart." Coming soon: a chart on real foods for babies.

Monica Corrado will teach cooking on Monday, November 15 as part of the Wise Traditions 2010 conference.

Tim's DVD Reviews

My Big Fat Diet

by Mary Bissell

**Produced by Bare Bones Productions
in association with CBC Newsworld**

Alert Bay is a fishing village near Vancouver, British Columbia, populated mostly by members of the Namgis First Nation. Their ancestors traditionally ate a lot of salmon, cod and shellfish. Fish farming has made those good, wild fish increasingly scarce. For many decades now the local people have been eating a typical carb-heavy diet and the results among the Namgis are the same as everywhere else—obesity, diabetes, heart disease and other illnesses. A century ago, one-hundred-year-old elders would still be dancing on special occasions. Now, nobody lives that long.

The Namgis were trying to lose weight by following expert medical advice to eat less and

exercise more. The results so far were underwhelming. Then Dr. Jay Wortman came along and suggested something a little different. He began signing people up for a medically supervised high-fat diet more in line with what their ancestors ate. Dr. Wortman was well aware of the fact that this advice went against the dictates of dieticians and the heart foundation. It took a while but he eventually found almost one hundred people who were not insane and were willing to consider the possibility that doing something different might be the best way to get different results.

Among the foods that traditionally supplied fat to the diet was oolichan grease—a traditional, highly esteemed fat prepared from great quantities of a small but lipid-rich fish of the smelt family. The Namgis had nice big jars of oolichan grease and they seemed to like it.

Well, what happened? Was Dr. Wortman a

Maybe there is some magic in that oolichan grease.

ALLERGY-FREE COOKING

In this well done DVD, Maureen Diaz, busy mom and traditional homemaker, often referred to as “the mother of many,” invites us into the kitchen with a lovely welcoming style. It is as though the viewer were standing at her shoulder rather than tuning into an impersonal cooking show. Drawing from her years of experience, Maureen explains and demonstrates the ways in which she makes nourishing traditional foods for her family, some of whom have allergies.

It is a reality of modern life that many of us have family members with allergies. Generations of eating what Dr. Price called “the displacing foods of modern commerce” has left our modern children with a variety of health problems including allergies. These are often a challenge for parents who have been taught to provide for their children with quick, on-the-go meals containing many allergens. These facts make this DVD a most important tool in a traditional cook's learning library. In addition to showing how to prepare many wonderful nourishing traditional foods, Maureen explains the why of their preparation. She teaches techniques like soaking, sprouting and fermenting with a simple grace that lets the viewer know this is the way to do it, without making parents feel devalued for the way they are doing things now or the fact that they are dealing with allergies.

Throughout the DVD Maureen points us to the easiest ways of doing things and gives options for different methods of preparing a particular recipe if you have a special occasion or wish to make it for those without allergies. This reviewer especially appreciated the fact that Maureen offered options for taking one recipe and splitting it into several different ones that work if you have a variety of allergic individuals in the family.

Not only does this DVD help us to prepare nourishing traditional foods for allergy sufferers but it gives us an education in proper preparation of these foods for us to maintain optimum health. Tips for obtaining, storing and caring for foods are also mentioned. The one thing that could be added would be printed recipes that the viewer could take into the kitchen and use after viewing the how-to. This however, if not enough to discredit a quality DVD cooking course. I give it a THUMBS UP. Review by Carol Chaffin Albrecht, Chico/Butte Valley Chapter WAPF co-leader and co-owner Chaffin Family Orchards, organic farm. The DVD is available from www.nourishingtraditionalcook.com.

dirty, lowdown hooligan who destroyed the health of these poor people? After three months the average change in weight was about sixteen and one-half pounds. No, they didn't gain that weight, they lost it. After six months the average weight loss was twenty-four pounds. Some who had diabetes saw improvements in symptoms in as little as three days. Total cholesterol was down by thirty percent. Maybe there is some magic in that oolichan grease. Maybe the experts are idiots. Or hooligans. My thumb is UP for this one.

***Find Out Your Nutritional Type
with This Simple Test!***

Dr. Joseph Mercola

<http://products.mercola.com/nutritional-typing/?source=nl>

The well-known and popular Dr. Joseph Mercola has produced a YouTube video in which he asserts that there is no one perfect diet. There are certainly general rules to live by, like avoiding processed foods, staying away from fructose (a friend of mine calls it high-fructose death syrup) and anything that excessively stimulates insulin production.

Mercola then dives into metabolic typing based on the book of the same name by William Wolcott and Trish Fahey. Dr. Mercola had worked with the metabolic typing principles for some time, and then later added his own refinements which resulted in a similar system he calls nutritional typing. According to nutritional typing, there are three nutritional types:

1. Those who thrive on a high protein, high fat diet and little carbs and veggies.
2. Those who thrive on a diet high in carbs and veggies and low in protein and fat.

3. Those who are about half and half.

Dr. Mercola goes on to say that a vegetarian diet is appropriate for about one-third of people. That statement in particular set off alarms among some of our members who brought this video to our attention.

As always, we want to look at this diet scheme through the filter of what Dr. Price observed and decide whether metabolic or nutritional typing is consistent with his findings. Our website discusses metabolic typing (<http://www.westonaprice.org/abcs-of-nutrition/960-the-right-price.html>) and the key point is that while primitive people ate many different varieties of foods, the nutrient makeup was very similar among all groups.

Price observed that nutrient density was the key to robust health. Vegetables and grains are not dense in nutrients, particularly the fat-soluble vitamins A and D. Since Dr. Mercola doesn't seem to like cod liver oil anymore, where do these vegetarians get the needed quantities of those vitamins? Should they just take a pill? Is that what the traditional peoples Weston Price studied did? I know a lot of WAPF members are fans of Dr. Mercola, and they may want to take a pill when they see the thumb is DOWN for this one. ☹☹

THE LIBERATION WELLNESS HOME COOKING

This video makes a very good companion to the Liberation Diet book which was reviewed in these pages in September 2009 and given a thumbs up.

Having read the book and learned the value of good fats and the dangers of too many starches, many people are often flummoxed as to how to put together a meal that incorporates these principles. And these are the people who already know how to cook whole foods from scratch! Add to them the legions who have never done more than microwave or order take out and you have an enormous audience who will benefit from this video.

In a clear and easy going manner Maureen Diaz shows us how to prepare complete, satisfying meals without undue demand on our time or budgets. One of my favorites is the broccoli fritatta. An entire meal in one bowl, taking minutes to assemble, it is offered as a breakfast option, but could well be served for lunch or dinner. After eating a portion of this, I feel confident that the dubious will realize that they do not need to load up on bread or potatoes to be satisfied.

This is not to say the video demonizes carbohydrates. In fact, there is a demonstration for properly preparing porridge. Maureen merely shows us how to dine beautifully with somewhat fewer starches and how to replace those calories with more nutrient dense ones from good quality fat.

Most of the basic WAP principle foods, such as bone broths and cultured dairy are included. Organ meats are hidden in a meat loaf. It is all there, without a lot of fuss or bother.

There were a few mentions of other recipes, such as one for homemade ketchup, that had clearly not made the final cut. This was only slightly disconcerting; a minor editing flaw that could be easily avoided in future episodes, which I hope will be forthcoming. Because once this one has been fully digested, I am sure the viewer will want more. THUMBS UP.

Review by Ellen Ussery. Available from www.nourishingtraditionalcook.com and www.liberationswellness.com.

Growing Wise Kids

SACRED FOODS FOR EXCEPTIONALLY HEALTHY BABIES...AND PARENTS, TOO!

Rediscovering Ways to Enjoy Ancient Traditional Wisdom

By Jen Allbritton, CN

Fish roe, liver, and bone marrow are a few examples of sacred foods honored by traditional cultures around the world, for nourishing not only babies, but mothers-to-be and growing children as well. We know from the travels of Weston A. Price that these sacred foods are undeniably nourishing, offering high levels of minerals and fat-soluble activators to support optimal development. For adults, these foods provide similar benefits, allowing efficient nutrient absorption and protection against disease. Granted, sacred foods are not your typical, everyday fare found in today's urban homes, and perhaps they do not appeal to everyone's taste buds—especially at first bite. But with some suave kitchen moves and an open mind, you may find them better received than you expected, and nutritionally they can't be beat!

SACRED FOODS ARE REVERED FOODS

The dictionary defines sacred as “reverently dedicated to some purpose. . . regarded with reverence. . .” Imagine a group of indigenous people living off their native land and thriving on their native foods. Elders of the group impart their wisdom to young men and women about to be married, to married couples and pregnant women, and to young mothers raising their infants and children. They will talk about specific foods needed to properly nourish their bodies during these critical periods. This counsel is not questioned or perceived as mere suggestion: these truths are revered.

What Weston A. Price discovered when evaluating these revered foods was that they were rich in minerals and extremely high in what he called “fat-soluble activators.” Minerals are the nutrients most people are familiar with—such as calcium, magnesium, phosphorus, iron and iodine—that play many roles in building a beautiful, fully-developed body and maintaining its

function throughout life. On the other hand, the “fat-soluble activators” are less understood and were a mystery even to Dr. Price when he first began his work. But what science has uncovered is the fact that these “activators” are the animal forms of vitamins A (retinol isomers), D (vitamin D₃ and isomers) and K (vitamin K₂).

The role of “fat-soluble activators” is best described by Dr. Price himself: “A question arises as to the efficiency of the human body in removing all of the minerals from the ingested foods. Extensive laboratory determinations have shown that most people cannot absorb more than half of the calcium and phosphorus from the foods eaten. The amounts utilized depend directly on the presence of other substances, particularly fat-soluble vitamins. It is probably at this point that the greatest breakdown in our modern diet takes place, namely, in the ingestion and utilization of adequate amounts of the special activating substances, including the vitamins [A, D and K₂] needed for rendering the minerals in the food available to the human system. It is possible to starve for minerals that are abundant in the foods eaten because they cannot be utilized without an adequate quantity of the fat-soluble activators.”¹

If we compare the body to a house built of bricks and mortar, think of the minerals as the bricks and fat-soluble activators as the mortar. In other words, we can consume a certain diet of fantastically nutrient-dense foods, but the value of such a diet comes down to what is actually absorbed. Without fat-soluble activator nutrients—namely vitamins A, D₃, and K₂—our efforts to consume the “right” foods will be futile.

Generations ago, sacred foods were revered, non-optional and non-negotiable additions to the diet. Today, the burden rests on all of us to reestablish these truths in our nutritionally confused culture. Only with our effort will inclusion

Without fat-soluble activator nutrients—namely vitamins A, D₃, and K₂—our efforts to consume the “right” foods will be futile.

of sacred foods in the diet become a common practice, passed down to future generations for the health of their own families, communities, and nations.

SAGE ADVICE FOR SACRED FOODS

Back to our elders' sage advice. The wisdom bestowed would sound something like this. At least six months before trying to conceive, both parents-to-be should ideally begin to consume ample amounts of sacred foods (see sidebar, below). However, those who have consumed the typical Standard American Diet (SAD) since childhood would need a longer period of time to correct nutritional deficiencies—at least two years before attempting to conceive. The SAD is laden with many foods that are counterproductive to producing vibrantly healthy babies: foods such as damaged fats (those overheated and extracted with solvents), commercially raised meats (if any meat is consumed at all, as many fall victim to the deception of vegetarianism), and an abundance of pesticides and chemicals via conventionally farmed foods, fast foods, processed ingredients, body care products, cleaning supplies and municipal water sources.

Once the miracle of life has begun, sacred foods should be maintained throughout pregnancy. Mom should continue with the same diet during breast feeding, which should go on at least one year. Somewhere around four to six months, baby will be able to supplement breast milk with his first foods, ideally pastured egg yolk and liver (see the article "Nourishing a Growing Baby" at www.westonapirce.org for more on feeding infants). Yolks supply choline for brain development and cholesterol to nourish the brain and build the intestinal system, while liver supplies needed iron—which drops considerably around six months of age—plus vitamins B₁₂, B₆, A and C, and almost every mineral the baby needs. Not

surprisingly, egg yolks and liver are both sacred foods.

The sacred foods we are familiar with in the western world include raw dairy products from pastured cows, egg yolks from pastured chickens and cod liver oil. In the context of the western diet, where the sacred foods are largely absent, cod liver oil provides a vital insurance policy. Until the Second World War, parents and health professionals understood that cod liver oil helped ensure optimal growth and development in children.

Four less commonly known sacred foods are small fish, fish eggs (fish roe), bone marrow and liver. With a little ingenuity, these nutrient-dense foods can be incorporated into the western diet in many delicious ways.

SMALL FISH

Small fatty fish, both fresh and dried, are exceptionally nourishing foods because they are eaten whole with the bones and sometimes—even better—with the heads and organs. There is no need to skin or de-bone these tiny critters; one consumes the whole kit and caboodle. And when dried, certain features—especially the eyes—become even more pronounced (which many kids think is pretty darn cool!). Dr. Price described several societies that preserved the high nutrient content in fresh fish through drying.

Anchovies, sardines and whitebait make a lovely addition to the family's fish intake. They



A 1930s ad for cod liver oil recognizes the role of cod liver oil in giving babies the help they need to build "a well shaped head, a straight strong back, a firm, full chest and sound, even teeth."

IMPORTANT SACRED FOODS OF NATIVE PEOPLES

SEAFOOD: whole small fish, fish livers, fish liver oil, fish heads and shellfish
RAW DAIRY: whole milk, fermented milk, cream and butter from pastured animals
EGGS: especially egg yolks, from poultry; eggs of insects and fish
ORGAN MEATS: liver, brain, tongue, marrow, kidney, lungs, stomach lining, intestines and reproductive organs
ANIMAL FAT: from cows, lamb, game, pig, poultry and sea mammals
INSECTS: Worms, caterpillars, larvae, grasshoppers, etc.

are rich in calcium and other minerals, and vitamins A, D and B₁₂. They also have lower levels of mercury and other contaminants compared to larger fish, such as shark and tuna, because they are so low on the aquatic food chain, munching mostly on plankton.² (See the Environmental Defense Fund's website for more details on contaminants in ocean-going foods, www.edf.org).

Anchovies are small salty, green fish that flourish in the Atlantic, Indian and Pacific Oceans. These slender, strong-tasting fish are often gutted and salted in brine, and packed in oil. "Gentleman's relish," a salty blend of anchovies, butter, herbs and spices, was popularized in England in the early 1800s as a spread for sandwiches and fla-



British whitebait, traditionally battered and fried in hot tallow—a truly healthy fast food!

vorful addition to fish cakes and croquettes. Throughout Europe, marinated fresh anchovies are also still frequently found on the menu. In the U.S., anchovies are a well-known topping on pizzas and an ingredient in Caesar salad dressing and Worcestershire sauce.

The term sardine applies to more than twenty varieties of small, oily, silvery saltwater fish related to the herring. Their name comes from the Italian island of Sardinia, where these fish were one of the first to be packed in oil. Today they are collected from the seas of the Atlantic, Pacific, and Mediterranean. Sardines tend to travel in large schools near the water's surface and are sold fresh (although hard to find), canned in oil (olive oil being the best choice) or sauce, salted, smoked or dried. Most commercially available

sardines are gutted with their heads removed then steamed before canning.³

Throughout Asia, dried baby sardines called *niboshi* (sometimes translated as anchovies) are consumed as snacks and traditionally used to make stock (called *niboshi dashi*) for miso soup. In Japan, sweet and savory fried sardines called *tazukuri* are enjoyed for New Year's celebrations,

and in Korea fried sardines are flavored with ginger, garlic, and chili paste.

Dried anchovies (available on-line through www.radiantlifecatalog.com) are delicious sprinkled in a fresh green salad or whirled in a chili or sauce, and make a humorous replacement for the typical "fish" crackers. Stir a handful into

pizza sauce before slathering it on a sourdough crust; no one will ever know there are little fishes swimming around in there! You can use sardines to top pizzas, blend into dressings or dips (see recipe, page 71), season soup, or mix into a salmon salad without much alteration to the meal's flavor. For the more adventurous, try a sardine wrap or sandwich with a fun spread such as hummus or olive tapenade, sliced hardboiled egg, tomato and avocado, all snuggled in a bed of arugula or watercress.

Whitebait is a term applied to young fish of a variety of species, one inch or less in length. The entire fish is eaten, including head, fins and gut. New Zealanders usually consume whitebait in an omelet or fried in batter. In Britain these sprats—usually young herring—are coated in

Small fatty fish, both fresh and dried, are exceptionally nourishing foods because they are eaten whole with the bones and sometimes—even better—with the heads and organs.

TABLE 1. COD LIVER OIL DOSE RECOMMENDATIONS

Children age 3 months to 12 years: A dose of cod liver oil that provides about 5000 IU vitamin A and 500 IU vitamin D, daily, obtained from about 1 teaspoon of regular cod liver oil or 1/2 teaspoon of high-vitamin cod liver oil. Use an eye dropper or syringe for the little ones.

Children over 12 years and adults: A maintenance dose of cod liver oil that provides about 10,000 IU vitamin A and 1000 IU vitamin D daily, obtained from 2 teaspoons of regular cod liver oil or 1 teaspoon of high-vitamin cod liver oil.

Pregnant and nursing women: A dose of cod liver oil that provides about 20,000 IU vitamin A and 2000 IU vitamin D daily, obtained from 4 teaspoons regular cod liver oil or 2 teaspoons high-vitamin cod liver oil.¹⁶

According to a recent WAPF-funded analysis by UBE Laboratories, fish eggs contain 17,000 IU vitamin D per tablespoon!

lemon juice and served with bread and butter.

FISH ROE

Fish roe or fish eggs have been a sacred food across the globe since ancient times. In his writings, Dr. Price detailed the great lengths the natives of the Andes went to carry dried fish roe from sea level back to their villages high in the mountains—sometimes hundreds of miles—to supply those of childbearing age with the nutrients needed to make the healthiest of babies. These nutrient-dense eggs are rich in vitamins A, D, and K₂ (Activator X) along with zinc, iodine, and the brain-building fatty acid DHA, making them a powerful superfood for babies and adults alike. According to a recent WAPF-funded analysis by UBE Laboratories, fish eggs contain 17,000 IU vitamin D per tablespoon!

The Eskimos consumed roe from salmon and other fish in large quantities, often daily. During the warm season, salmon roe was dried in the sun to preserve it for use throughout the year, especially for pregnant women.

As one can imagine, there are many choices when it comes to fish roe. While most people associate fish eggs with caviar, technically, the only fish roe classified by this name comes from the prehistoric freshwater beluga sturgeon.⁴ All other varieties are simply fish eggs or roe, but they are usually prepared in the same way. The caviar process involves separating the fish eggs from the membrane by passing them through a sieve. The liquid is pressed off, and the eggs are mildly salted and sealed fresh in small tins, or they are canned and heat treated.

Salmon roe is one of the more accessible and generally better tasting fish roes available. In Japan, salmon roe—called *ikura*, borrowed from the Russian *ikra*—is used in making sushi, as is the sweet-tasting bright orange-red roe called *tobikko* that comes from flying fish, and

that typically appears on California rolls in sushi restaurants. (Note: most California rolls contain additive-filled imitation crab meat; simply request that the real crab be used).⁵

Salted, processed “caviar,” whether fresh or canned, is delicious with finely chopped onions and sour cream. Put a dollop of creme fraiche or sour cream on a good quality cracker or crispy pancake, top with the fish eggs and finely chopped onions. These will disappear quickly!

Unprocessed roe is more difficult to eat and prepare. It comes fresh, frozen, smoked or dried. If you are a fisherman and find roe in your fish, be sure to scoop it out and eat it on the spot—or save and serve with toast and butter when you get home. Your fish monger may also have fresh fish roe. Shad roe, available on the East Coast during the

spring, is a regional delicacy that can be prepared in a variety of ways.

Unprocessed dried and frozen fish eggs are available through mail order (such as www.livesuperfoods.com or www.vitalchoice.com); they tend to be sticky and a challenge to prepare.

Frozen eggs can be thawed and used as needed. Toss a few on the high-chair tray for baby; he will more often than not enjoy his “salty peas,” as Nina Planck, author of *Real Food*, calls them. Another easy way to incorporate fresh or dried roe is by adding a little scoop into an egg scramble for the family or egg yolk pancake for baby (put one to two free-range egg yolks into a bowl and mix in cooked veggies, meats or fish and the fish eggs with seasonings and cook on a hot skillet like a pancake). Try blending a dollop into your next salmon salad with mayo and pesto. Mix it into your sun-dried tomato spread, smoked salmon dip (see recipe p. 71), or raw ketchup for a nutrient-boost.

In Greece and other European countries, fish roe that has been salted and smoked or dried is the main ingredient in the delicious fish roe



Pale, yellow caviar served with finely chopped onions and sour cream on crispy pancakes.

spread called tamarasalata.

LIVER

Liver from poultry (goose, duck, turkey or chicken), fish, cow, lamb, game and pig is recognized the world over as a superfood. All liver is rich in iron and other minerals, choline, and B vitamins, especially all-important B6 and B12. Liver from ruminant animals (cow, lamb and game) is our best food source of vitamin A; pig liver is loaded with vitamin D; liver from poultry contains about half the vitamin A as beef or lamb liver, but may be the best of all the livers with its nice balance of vitamins A, D and K₂.

Because mother’s milk is low in iron, liver is a valuable first food for baby, as around six months a full-term baby’s iron stores begin to decrease. In many traditional cultures, pre-chewed liver is a common first food.⁷ It is no wonder this food is revered for its nutritional gifts—compared to other foods, it outdoes most others in terms of vitamin and mineral concentration (see chart below).

Ideally, purchase liver from animals that have enjoyed their lives on chemical-free pasture. The second best choice is organic chicken, beef, or calf liver. Third choice, non-organic calf liver, since these younger animals typically spend the first months of their lives on pasture. The amount of time on pasture varies from ranch to ranch, so do some investigative digging. Avoid livers from conventionally feed-lot raised chickens, hogs or cattle.⁸

As for taste, calf liver is considered the best of the best because of its delicate taste and tenderness. Lamb liver runs a close second and chicken liver is similar in rank because of its

lighter flavor and texture. Beef liver is tougher and has a stronger flavor compared to calf liver, but if not overcooked, can still be delicious. Pork liver has the strongest flavor and is best utilized in highly seasoned liverwurst.

No matter what type of liver you choose, soaking or marinating liver will temper the strong flavor or bitterness some people find unpleasant, as well as make it more tender. Milk, buttermilk, sour milk, lemon juice, or vinegar works well.

Since liver is low in fat, it is good to cook it with plenty of lard, goose fat, bacon fat, or coconut oil. Vitamin D-rich lard or bacon fat are perfect with beef or lamb liver, as these are high in vitamin A but contain little if any vitamin D.

Eat liver fried, grilled, with bacon, or in sausage, pâté and liverwurst (a wonderful source for liverwurst is www.grasslandbeef.com). Keep in mind, cooking beyond medium rare will result in a tough piece of liver; the inside should be pink, but firm. When planning your liver dish, remember that onions, especially caramelized, are liver’s most compatible accompaniment.

Liver is easily disguised within meat dishes via meatballs, burgers, meat loaf, taco filling, and stews. And of course, poultry liver can be made into delicious spreads and patés.

Consider grating partially frozen liver and re-freezing it into clumps or ice cube trays for quick access to smaller amounts of liver to add to all these dishes at a moment’s notice.

If liver is something that your family isn’t ready to accept quite yet, consider desiccated liver in powder or capsules (available from www.radiantlifecatalog.com). Desiccated liver can be added to various meat dishes without compro-

Liver from poultry contains about half the vitamin A as beef or lamb liver, but may be the best of all the livers with its nice balance of vitamins A, D and K₂.

LIVER: NO OTHER COMMON FOOD IS HIGHER IN NUTRIENTS				
Per 100 grams	APPLE	CARROTS	RED MEAT	LIVER
Phosphorus	6 mg	31 mg	140 mg	476 mg
Iron	0.1 mg	0.6 mg	3.3 mg	8.8 mg
Zinc	0.05 mg	0.3 mg	4.4 mg	4.0 mg
Copper	0.04 mg	0.08 mg	0.2 mg	12 mg
Vitamin B2	0.02 mg	0.05 mg	0.2 mg	4.2 mg
Vitamin A	0	0	40 IU	53,400 IU
Vitamin C	7 mg	6 mg	0	27 mg
Vitamin B6	0.03 mg	0.1 mg	0.07 mg	.73 mg
Vitamin B12	0	0	1.84 mg	111.3 mg

An important part of the nutrition of the children [of Native Americans] consisted in various preparations of bone marrow, both as a substitute for milk and as a special dietary ration.

mising the taste of your dish.

Canned cod livers are another option—they are surprisingly mild. Mix them into other meat or seafood dishes as mentioned above or make a spread as detailed in Sally Fallon Morell and Mary Enig’s *Eat Fat Lose Fat*: blend a can of smoked cod livers with three tablespoons of mayonnaise and add salt and pepper. Serve with crackers or spread in a sandwich or wrap. If canned cod livers are unavailable at your local retailers, visit one of the many seafood retailers on the internet.

BONE MARROW

“Traditional peoples who consumed large animals did not ignore the marrow hidden away in the bones; in fact, they valued the marrow as an extremely nutritious food,” explains Sally Fallon Morell in her piece titled “Bone Marrow” (found at www.westonaprice.org).⁹ There are many examples from cultures around the world: Alaskan natives regularly eat the marrow from caribou and moose, Indians enjoy the traditional dish called *nalli nihari* from slow-cooked marrow, a Mexican dish featuring beef bone marrow (called *tuetano*) is used as taco and tostada fillings, and in the Philippines bone marrow is the primary ingredient in a soup called *bulalo*. Interestingly, the literal translation of bone marrow in Russian is “bone brains,” which indicates that its value was long ago understood.¹⁰

Dr. Price stated in *Nutrition and Physical Degeneration*, “An important part of the nutrition of the children [of Native Americans] consisted in various preparations of bone marrow, both as a substitute for milk and as a special dietary ration.”¹¹ And while developing a meal plan for an orphanage, Price included bone marrow. “They then received a bowl containing approximately a pint of a very rich vegetable and meat stew, made largely from bone marrow and fine cuts of tender meat: the meat was usually broiled separately

to retain its juice and then chopped very fine and added to the bone marrow meat soup which always contained finely chopped vegetables and plenty of very yellow carrots.”¹²

Lab tests show that 100 grams, approximately six and a half tablespoons, of bone marrow contains 677 IU vitamin A, 29 mcg vitamin K₂, and high levels of nourishing fats (up to 45 percent saturated). Bone marrow is rich in spinogolipids, which are specialized fats that protect cell membranes against environmental insults and that are critical components of the brain and nervous system.^{13,14} When purchasing marrow bones (typically shank), do your best to get free-range choices—lamb, beef, buffalo, and so on.

An easy way

to infuse marrow into a meal is to simply melt the marrow from within the bone right into a slow-cooking sauce or stew. Marrow bones can also easily be roasted or boiled. For roasting, Fergus Henderson, author of *The Whole Beast: Nose to Tail Eating*, has an easy explanation: place the marrowbone pieces (approximately 3 inches each) standing upright in an ovenproof frying pan in a 450°F oven for about 20 minutes. Henderson says “you are looking for the marrow to be loose and giving, but not melted away, which it will do if left too long.” The ends will get a touch crispy. To eat the marrow, extract with a small fork or special marrow extractor, spread on toasted sourdough bread, sprinkle with sea salt and top with parsley salad.

For a pinker, less-grey marrow, soak two- to three-inch bones in cold water for twelve to twenty-four hours, changing the water several times. Although this step is nutritionally unnecessary, the resultant less-grey color may make the marrow more appetizing. Then cover the soaked bones with cold water, bring to a low boil and simmer for approximately twenty minutes to one hour (depending on the size of the bones).¹⁵



Marrow bones cut across the bone and split lengthwise.

Once cooked, use a kitchen towel to handle the hot bones and scoop out the marrow with the end of a spoon or a special marrow spoon and spread it like butter on crackers, mix it into a spread or dip for veggies, add a dollop into a bowl of soup or stew (see recipe page 72); no great fanfare is needed. Try spreading a thin layer of marrow on a tortilla (preferably sprouted grain), top with salsa, lime, and a sprinkle of sea salt and enjoy.

A CULTURAL IMPERATIVE

Following revered sacred food practices of long ago is not only sensible, but more important, essential. Whether you have plans to grow a baby, maximize your child's brain and physical development, or optimize nutrient uptake during your adult years, sacred foods must be regular meal-time features. It is imperative that we passionately pursue ancient dietary wisdom for the sake of our families and make sacred foods more of a commonplace addition to our current culinary traditions. ☯

Jen Allbritton is a certified nutritionist and author. She lives with her family in Colorado and spends lots of time in her kitchen cooking up WAPF-friendly creations. Contact her if you'd like to learn more about subjects related to diet and children at jen@growingwisekids.com.

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RECIPES HIGHLIGHTING THE SACRED FOODS

CREAMY GREEN DRESSING

- | | |
|------------------------------------|--|
| 1 avocado, peeled and pitted | 1/2 cup mayonnaise (preferably homemade) |
| 1/2 cup sour cream or yogurt | 5 or 6 anchovy filets, chopped |
| 2 tablespoons chopped green onions | 2 tablespoons chopped cilantro |
| 1 tablespoon lemon or lime juice | 1 clove garlic, chopped |
| Salt and pepper to taste | |

Cream all ingredients in a food processor or blender and refrigerate for up to 24 hours in an airtight container. Use on salads, as a dip for raw or steamed vegetables, or blend into mashed cauliflower or potatoes.

SMOKED SALMON AND FISH ROE DIP

- 1/2 cup chopped smoked salmon
- 2 tablespoons freshly squeezed lemon or lime juice
- 4 ounces cream cheese, preferably organic or homemade
- 2 tablespoons minced red onion or green onion
- 1 to 2 tablespoons dried fish roe
- Salt and pepper to taste

In food processor, mix all ingredients until smooth. Store in an airtight container in refrigerator for up to 24 hours. One tablespoon of fish roe supplies 17,000 IU vitamin D. Combining fish roe with sour cream, crème fraîche or cream cheese supplies vitamins A, D and K₂ all together; a dynamite sacred food combo!⁶

LIVER AND FIG SAUTE

<i>2 onions, chopped</i>	<i>1 red pepper, chopped into bite-sized chunks</i>
<i>5 dried figs, chopped into small bits</i>	<i>1/2 cup orange juice, freshly squeezed preferably</i>
<i>1/2 cup homemade beef or chicken stock</i>	<i>1 cup sliced beef, bison or chicken liver, organic and pastured</i>
<i>Salt to taste, about 1/2 teaspoon</i>	<i>1 tablespoon lard or bacon fat</i>

Marinate liver in sour milk or water with a bit of vinegar for several hours if desired. Sauté onions in your choice of fat until they are translucent. Add the red pepper and figs and cook until tender. Pour in the broth and orange juice and cook until there is a sauce-like consistency. Add the liver and cook until just done (and pink in the middle). Serve with whole grain or toasted sourdough bread. Recipe created by Dianne Koehler, Nutritionist, MNT.

HEARTY BEEF AND BONE MARROW SOUP Makes 6 quarts

<i>4 beef shanks, cross-cut at 2-inch intervals</i>	<i>6 tablespoons olive oil</i>
<i>4 quarts filtered water</i>	<i>2 pounds carrots, peeled</i>
<i>2 pounds potatoes, washed</i>	<i>1 pound shallots or onions, peeled</i>
<i>2 large cans crushed tomatoes</i>	<i>1 cup balsamic vinegar</i>
<i>3-4 bay leaves</i>	<i>4 tablespoons green peppercorns</i>
<i>1 tablespoon coarse black pepper</i>	<i>3 tablespoons fresh garlic, chopped</i>
<i>1 cup fresh parsley, chopped</i>	<i>Sea salt to taste</i>

Chef John Umlauf prepared this delicious recipe at the 2004 Wise Traditions Conference, with rave reviews. Pat shanks dry and sprinkle with black pepper. In a heavy-bottomed, non-aluminum stockpot, heat half the oil. Sear the shanks on both sides until brown. Add water, vinegar, tomatoes, bay leaves, and peppercorns. Simmer for 4 hours or until beef is flaky tender. Remove meat and bones from the stock and allow to cool. Return stock to a simmer and skim debris from the top of the liquid. Separate the meat from bones and gristle. Cut potatoes and carrots into bite-sized pieces and add to stock along with the garlic. Quarter the shallots or onions, toss them in the remaining oil, roast or sauté until brown and add to stock. When the vegetables are tender, add meat, chopped parsley and salt to taste.

EASY CHICKEN LIVER PATE

<i>1 pound livers from pastured chickens</i>	<i>2 tablespoons butter, lard or bacon fat</i>
<i>1/2 cup cognac</i>	<i>1/2 cup homemade beef or chicken stock</i>
<i>1 clove garlic, crushed</i>	<i>1 teaspoon dried green peppercorns, crushed</i>
<i>1/4 teaspoon dried rosemary, crushed</i>	<i>1/2 teaspoon dry mustard</i>
<i>1/2 teaspoon dried dill</i>	<i>3-4 tablespoons softened butter</i>
<i>unrefined salt to taste</i>	

Chicken livers are lower in vitamin A than beef or lamb liver, but may be better nutritionally because they contain a balance of vitamins A, D and K₂—all three of Weston Price's fat-soluble activators in one delicious package.

Pat livers dry and saute in butter, lard or bacon fat until well browned. Add cognac and stock to the pan and deglaze. Add garlic, peppercorns, rosemary, mustard and dill. Boil the liquid down until it forms a thick paste. Allow the livers to cool slightly and then process until smooth in a food processor with softened butter. Season to taste with unrefined salt. Serve with sourdough toast or on endive leaves.

BONE MARROW CUSTARD Serves 4

<i>about 6 marrow bones, 2-3 inches in length</i>	<i>1 cup heavy cream</i>
<i>2 egg yolks</i>	<i>1 whole egg</i>
<i>unrefined salt and pepper to taste</i>	

Soak marrow bones in cold water for 12-24 hours, changing the water several times. Cover the bones with cold water, bring slowly to a boil and barely simmer for about 20 minutes. Scoop the cylinder of marrow out with the handle of a small spoon. Blend cream, marrow and eggs and season to taste. Pour into four small buttered ramekins, place in hot water and bake at 300 degrees for about 20 minutes or until the custard is set. Let cool and unmold. Serve as an accompaniment to meat.

Food Feature

LACTO-FERMENTATION MADE EASY WITH THE PICKL-IT SYSTEM

By Kathleen Mills

The Pickl-It system for producing tasty lacto-fermented foods was the blessing that emerged in our efforts to help our adopted son.

He was eleven months of age when we adopted him, diagnosed developmentally at a two-month-old level. Lacking motor skills—no crawling, sitting or interest in holding toys—he occupied himself by head-banging or hyper-focused staring at one object. If we touched or talked to him, he'd react by bursting into ear-splitting screams. Rejecting our offers of comfort and hugs, he'd free himself from our grasp, avoiding eye contact when we pleaded with him to let us help.

There was no doubt that a poor diet during his first 11 months of life—sugar water and soy formula—played a role in his poor physical and mental condition.

Nearly as troubling as finding blood trailing down his cheeks, resulting from his self-mutilation, was the condition of his gut.

DROPPINGS

My husband and I were “poopologists,” as one doctor along our journey described us. We'd been trained by twenty years of parrot keeping, monitoring the health or illness of our flock by observing the color, shape and frequency of their droppings.

Applying that knowledge to our son, we were greatly alarmed by his “droppings.” They alternated from bright gold to dry and white, with a sawdust-texture. If we didn't immediately change his diaper, flame-red half-dollar size blisters appeared.

We noticed that when his bowel movements cycled from bad to worse, his over-sensitivity to sound and light, hyper-focusing on objects, self-mutilation and insomnia all intensified.

TAKING ITS TOLL

The constant health and behavior issues were taking a toll on our entire family. Seeking the advice of doctors, we were discouraged when they failed to show any interest in the topic of our son's bowel movements. Each appointment ended with a referral to yet another doctor. When we finally reached the top of the stack of diplomas, degrees and specialties, we weren't any farther ahead than when we first began. In frustration, and only partially in jest, I suggested we'd get better results if we

glued parrots feathers to our son, letting our board-certified avian vet take a look at him. All health-based discussions about our parrots always began with good solid data, obtained from various blood panels and stool cultures.

At four years of age, our son displayed significant visual and auditory hallucinations, as well as violent behavior during his Early-Intervention therapy program. A psychiatrist determined that the only “logical explanation” for his “condition” was schizophrenia, but given its rarity in a child so young, she

referred us to her former colleagues, recognized as world renowned autism researchers.

They took a “conservative” approach, tabling the schizophrenia-diagnosis, and instead orchestrating a whirlwind series of tests over the next few months: MRIs, EEGs, BEAM (kicked-up EEG), IQ, competency exams, as well as stool, urine and blood panels. The tests ruled out seizures, brain tumors, fragile-X, and epilepsy. Relieved to eliminate conditions our son didn't have, we still weren't any closer to understanding his condition.

We found clues in a WAPF article, “Soy: The Dark Side of America's Favorite ‘Health’ Food,” where we learned that estrogens (including the



The Pickl-It system for producing tasty lacto-fermented foods was the blessing that emerged in our efforts to help our adopted son.

phytoestrogens in soy) can block the efficiency of thyroid hormones. Low levels of thyroid hormones can mimic psychiatric disease, paranoid depression and even hallucinations. We also learned that soy formula can depress learning and contribute to anti-social behavior.

Everything began falling into place. Noting the “poopologist” role we’d taken with our son, one of the doctors agreed that our best plan of action for our autism-spectrum son, was to continue following WAPF dietary guidelines that we had adopted in order to heal his gut. She urged us to increase our variety of lacto-fermented foods which she described as “nature’s original probiotics,” very effective at replenishing the intestinal mucous lining and maintaining a healthy microbial balance, so lacking in children like our adopted son.

ROAD TO RECOVERY

Within thirty days of stepping up our production of lacto-fermented beets, sauerkraut, carrots and kefir, the changes in our son’s “poopology” were amazing. In addition, he became more calm, making eye-contact and responding to us in full sentences. An administrator from our son’s school phoned to ask if we’d put our son on drugs without telling them, because he had become more teachable in a very short amount of time. It felt great to tell her the only thing we put him on was real food!

There was one final bump remaining on our road-to-recovery. Like so many other children suffering from autism spectrum disorders, our son had sensory issues—in his case, an acute sense of taste and smell, created a very narrow range of acceptable flavor and texture. My fermented foods were erratic, lip-puckering sour one week; the next, mushy and bland. He expected the new batch of sauerkraut to taste like the last batch. When they didn’t, his response was often one of indignation and rage.

THE SOLUTION

When my husband took a wine-making class, we found a solution! Combining airlock technology from wine-making with the old fashioned, air tight glass wire-bail canning jars, we created Pickl-It, an anaerobic lacto-fermentation system.

The advantages over using simple mason jars are numerous:

- anaerobic conditions
- tight-fitting wire-bail seal and lid
- automatic release of excess carbon dioxide and oxygen
- eliminates manual “burping” of wire-bail jars
- eliminates discoloration of food due to oxidizing

- pest-proof barrier
- consistent flavor and texture
- reduced fermenting odors, especially helpful for “sensory” issues

The jars with airlocks are now available in sizes ranging from three-quarters to five liters, with two sizes of airlocks. To order and for recipe ideas, visit www.pickl-it.com. Below are a couple of recipes from our website.

While the two preceding generations of my family abandoned traditional foods, my desire is for my children to return to living nutrition. Pickl-It is an easy, successful system my children are now learning, which they will carry with them into adulthood and passing it on to the next generation. As our oldest says, “I can’t imagine living without these pickles!”

PICKL-IT SAUERKRAUT

Select the Pickl-It jar of the appropriate size based on the amount of cabbage you will be preparing. In general, one medium cabbage will fill a three-quarter liter jar.


Slice cabbage into 1 mm threads using a mandolin—thin, uniform cuts are key to great sauerkraut. Layer your cut cabbage in the jar, sprinkling each 1-inch layer with salt. Use 3 tablespoons salt per 5 pounds cabbage. Push 6-8 times with wooden dowel, compacting until all the cabbage and salt is loaded. Latch the jar with the Pickl-It lid and insert the Plug-R into the lid’s grommet, keeping air out.

Allow container of cabbage and salt to macerate, that is, allow the salt to pull water from the cabbage, for 30 minutes at room temperature. Check brine level; if you’re at maximum fill, or brine is 1-inch above cabbage, latch the lid closed. If you need more brine, allow the cabbage to macerate longer.

Fill water in the airlock and wrap Pickl-It with towel, blocking light, taking care not to cover the airlock. Check the jar in 24 hours to make sure the sauerkraut hasn’t expanded, reaching the airlock; if it has, remove some brine and kraut. Continue to ferment for 7-10 days at 68-72 degrees F. Traditional cultures did not eat the kraut sooner than 2 months. May be stored in the refrigerator or a root cellar.

RED LENTIL DOSAS

3/4 cup long-grain rice, such as jasmine or basmati rice
1/4 cup red lentils *1 cup warm water*
1 teaspoon salt *1/2 teaspoon ground turmeric*
1/4 teaspoon freshly ground black pepper
2 tablespoons chopped fresh cilantro
grass-fed, organic ghee for frying and drizzling

Place rice, lentils and water, in a Pickl-It, cover, add airlock fill with water, and allow mixture to soak for 8 hours at room temperature. Drain, reserving the soaking water. Place rice and lentils in food processor; blend until smooth. Add reserved soaking water and blend. Scrape the puree back into the Pickl-It, cover and lock lid, making sure the airlock water is filled to the line. Allow batter to ferment for 12-24 hours. Stir in salt, turmeric, pepper and cilantro. Heat a cast iron tortilla flat pan and brush on thick layer of ghee. When water bounces across the surface, you’re ready to cook dosas. With a 1/4-cup ladle, spoon dosa batter onto hot pan, using the back of the ladle to spread a 6-inch diameter. Cook for 30-60 seconds. Drizzle the top with melted ghee. Carefully turn and cook another minute. Keep warm in a low oven over simmering water, while cooking the remainder of the dosas, or hand them out to the extended plates, hovering mid-air. 

Soy Alert!

RESPONSE TO DR. MARK HYMAN

By Kaayla T. Daniel, PhD

On August 10, 2010, Dr. Mark Hyman posted an article “Soy: Blessing or Curse?” on the Huffington Post blog (http://www.huffingtonpost.com/dr-mark-hyman/soy-blessing-or-curse_b_673912.html). Widely circulated online, soy proponents are touting the posting as an example of “sanity” in the “soy debate.” Hyman describes himself as “a practicing physician and an internationally recognized authority in the field of Functional Medicine.” He is founder of The UltraWellness Center and author of the best-selling “The UltraMind Solution,” among other books.

In Hyman’s words, he wishes there were “more convincing science to report” regarding the soy controversy but he has taken “all the available evidence together” to see “what shakes out.” Hyman has long recommended soy as part of what he calls a “whole foods diet” and is disturbed by fear mongering from anti-soy people. Who these “anti-soy” people are exactly, he doesn’t say.

The most prominent group warning about the dangers of modern soy consumption would be the Weston A. Price Foundation. The late Valerie and Richard James of Soy Online Service in New Zealand were also extremely active in warning about excessive consumption of modern processed soy products and the use of soy infant formula for babies. Our concerns revolve around the myth of soy as a “health food” and how the heavy marketing of soy has led people to over-consume soy foods and soy milk and to feed their infants soy formula, putting themselves and their children at risk. To say we are “anti-soy,” however, would not be entirely accurate as we support the modest consumption of old-fashioned fermented soy products such as miso, natto and tempeh. These foods are appropriate in the context of a varied omnivorous diet. I would prefer to say we are pro real foods, whole foods and slow foods, prepared in traditional ways, which modern soy foods most assuredly are not.

NUGGETS OF WISDOM

There are indeed some sage and sane observations in Hyman’s article. He notes, for instance, that eating tofu would be wiser than chicken nuggets. Presumably he is referring to fast-food nuggets

from factory-farmed chickens (fed soy-based feed), their meat then “extended” with soy protein isolate and other additives, the final product fried in soy oil. Wise to get the plain tofu, for sure.

Hyman also advises eating old-fashioned fermented whole soybean products. Wise again to avoid industrially processed soy protein isolate, soy protein concentrate, textured vegetable protein and hydrolyzed vegetable protein, and other industrially processed products, all of which contain MSG, hexane and other toxic and carcinogenic residues. All of us so-called “anti-soy” people would agree with that, except for the increasing numbers of people who are allergic to soy. They have a reason to be one hundred percent “anti-soy.” And they are angry “anti-soy” people because they find it hard to find anything that’s safe to eat. Finding soyfree, packaged, processed and fast foods can be well-nigh impossible. Soy ingredients right now are in more than 60 percent of processed and packaged foods and nearly 100 percent of fast foods. The most allergic of these people cannot even tolerate meat, poultry, fish, dairy and eggs from animals fed soy feed. Sadly, even most of the organic and free range products come from animals fed in this unnatural way.

For those who are not allergic, the old-fashioned fermented soy products miso, natto and tempeh are fine, but Hyman reveals his ignorance of processing methods when he claims that tofu and soymilk are fermented. Although they are sometimes fermented in Asia—to remove the “poisons” according to one person interviewed in a National Geographic film—none of the tofu products widely available in stores is fermented. Even so, a little regular tofu once in awhile—not everyday, and certainly not a whole slab at a time—is not a problem for most individuals.

As for soy milk, no commercial brand is fermented, and most have been loaded up with sugar to make them palatable and with supplements to improve their inadequate nutritional profile. Too bad those supplements include cheap, hard-to-absorb forms of calcium, vegetarian Vitamin D₂ (instead of the far superior D₃) and beta carotene (in lieu of true Vitamin A).



The most allergic of these people cannot even tolerate meat, poultry, fish, dairy and eggs from animals fed soy feed.

Hyman is smart, too, to advise against genetically modified soybeans. Their risks to personal and planetary health are high, and described vividly and accurately by Jeffrey Smith in his own Huffington Post article (www.newswithviews.com/Smith/jeffrey8.htm).

EVERYTHING IN “MODERATION”

Sadly, Hyman dismisses the idea that excessive soy consumption is a problem. In his words: “First, you should be aware that the amount of soy used in many of these studies was much higher than what we normally consume—the average dose of soy was equivalent to one pound of tofu or three soy protein shakes a day. That’s a lot of soy! Most people just don’t eat like that. So when you read negative things about soy, remember that many of those claims are based on poorly designed studies that don’t apply to real-world consumption.”

Sounds reasonable, but given the current popularity of plant-based diets and the myth of soy as a “health food,” the truth is many people do eat a pound of tofu in a single sitting. Add in a

daily soy protein shake made with soy milk, a veggie burger washed down with a glass of soymilk and soy energy bar snacks and the quantities add up quickly. Vegans who use soy as both meat and dairy replacements are clearly high risk, as are prisoners forced to eat soy at every meal. But so are omnivores who drink soy milk several times a day or snack on soy protein bars and nosh on edamame like it’s popcorn. Given the increasing numbers of people who react poorly to ultrapasteurized supermarket and health food store dairy products, a whole lot of people drink soy milk several times a day. That’s excessive consumption, and it matches the levels in numerous studies showing the dangers of soy.

Hyman mocks the anti-soy contingent with the words, “You could apply that thinking to other studies, too—like those that show that broccoli contains natural pesticides or that celery is high in toxins. Sure, those foods might cause you some problems—but not in the amounts that most of us eat. The same is true for soy.” Well, yes. There are risks to plant foods! I discuss some of them in my article in the Spring 2010 issue “Plants Bite Back!” About time someone noted this in the popular press. Not having the “fight or flight” mechanism, plants fight for their lives with phytochemical warfare, so predators will weaken, possibly die, but most importantly, lose their ability to reproduce.

Until plant-based diets became fashionable, most people didn’t eat massive amounts of vegetables. Even now, few people eat broccoli three times a day every day. And a good thing too, as there are risks to excess consump-

FOWL PLAY: PLUMPED AND PUMPED MEAT

Ever wonder about those plump well-endowed DD cup chickens at the supermarket? Yes, chickens today are bred to be mostly breasts, but that’s not all. Such chickens—or at least their parts—could well be examples of “re-formed meat technology” also known as “pumped meat.” Same might be true of supermarket turkeys, hams, beef and even fish.

To create simulated “whole cuts,” food processors start with pieces of real meat, poultry or fish, then mix in—or inject—some form of soy protein along with soy or another vegetable oil, food colorings, salt, phosphates, flavorings (including MSG) and other additives. These are then massaged, shaped and bound into familiar meat-like shapes—such as chicken nuggets. After fabrication, these products may be sliced, ground or dried.

Such products sell poorly in supermarkets—where ingredient labels are required—but they sell briskly at fast food establishments where customers rarely ask nosy questions about what’s in those meaty nuggets, and nobody is required to tell them. In 1990, Clyde Boismenu, a longtime distributor for Archer Daniels Midland, said in an interview with William Shurtleff of the Soy Foods Center in Lafayette, California, that one of the main obstacles in the U.S. to gaining consumer acceptance for his products was the “obnoxious meat labeling requirement.” Specifically he was upset that “if isolates are injected into ham, it must be sold as a ‘smoked pork ham with soy protein isolate. product.’” Seems the soy industry has been hot and bothered by such labeling requirements for years. Back in 1969, *Soybean Digest* reviewed the regulatory problems and complained that “new product concepts” would be canceled because of “standard of identity” problems as well as failure to secure prompt government approvals. Pity.

So what about those plump chickens at the supermarket? If they look like chickens, they are probably not reformulated, but they might well be plumped—meaning pumped up with a broth-like liquid containing sodium, water and other solutions and then sold as “all natural chicken.” These additives can legally make up fifteen percent of “all natural” chicken, a situation that Dr William Campbell Douglass has described as “the most clucked up nonsense I’ve ever heard!”

Dr Douglass goes on to say that such “bizarre logic” could only be found in Washington because anyone with “even a bird-sized brain knows that broth and sodium solutions are no more a “natural” part of a chicken than a McNugget.” Even Perdue—a major purveyor of low-quality, factory-farmed chickens—has asked the USDA to change this regulation.

Interesting that Perdue, a company whose founder claimed “It takes a tough man to make a tender chicken,” has decided to take a tough stance against the USDA and protest the unnatural ways its competitors tenderize chickens. As for Perdue, the best thing that can be said about its operation is that its famous slogan has been hysterically mangled in translation, leading to laughter heard around the world. Billboards in Mexico for awhile said, “It takes a hard man to make a chicken aroused.” In other countries, the slogan was translated into “It takes a virile man to make a chicken pregnant.” Meanwhile, Kentucky Fried Chicken has had its own translation problems. In China, the slogan “finger-lickin’ good” came out as “eat your fingers off.” Hopefully, such advertising led people to buy local!

tion of cruciferous vegetables. The supplement industry, however, is doing its best to “improve” on real life consumption patterns by formulating broccoli pills that will concentrate the compounds found naturally in the real vegetables. I predict that such supplements will lead sooner or later to serious health problems. In the meantime, some real life people eat soy for breakfast, lunch, dinner and snacks. One weight lifter and fitness buff I know took in a gallon of soy milk everyday for a year or so. He is now coping with neurological problems, stuttering and other speech defects.

SOY AND BREAST CANCER

“Don’t worry about soy’s effect on breast cancer,” advises Hyman, implying there is consensus in the scientific community. No such consensus exists. Indeed numerous studies link soy to breast cell proliferation, a well-known marker of breast cancer risk. Accordingly, the Israeli Health Ministry, French Food Agency and German Institute as well as Cornell University’s Center for Breast Cancer and Environmental Risk Factors have all warned women who’ve been diagnosed with—or have a family history of breast cancer—to exercise caution when it comes to soy.

If it were true that “real life” people rarely eat too much soy, we could probably relax. But “moderation” means different things to different people, and Hyman recommends both good soy foods like miso and tempeh that are rarely over-consumed and bad ones like soy milk that are very easy to over-indulge. Furthermore, Hyman’s assurances that soy isoflavones have beneficial hormonal effects, rarely contribute to endocrine disruption, do not endanger the thyroid and will reduce breast cancer risk will lead some women to purposely increase their consumption of any and all soy products.

Will all those women be at risk? Probably not. A few studies do suggest soy isoflavones could benefit women by reducing their breast cancer risk. But not all women and not at all stages in the life cycle. Accordingly we need reliable lab tests that will show which women might benefit from soy isoflavones, and which would be harmed. Those women who could possibly benefit from soy isoflavones could then take them like pharmaceutical drugs with appropriate dosing, monitoring and follow up. In other words, we need to treat soy isoflavones like a drug and not allow it to be sold over the counter. The soy industry’s marketing of soy—of any type eaten in virtually any quantity—as the ticket to an easy menopause and breast cancer prevention is irresponsible.

Hyman’s recommendation that women who want to avoid breast cancer should avoid saturated

fat is yet another example of how he’s either not done his homework or is pandering to politically correct ideas of nutrition. At least he’s got it right about the dangers of *trans* fats. They are definitely linked to breast cancer and should be assiduously avoided.

SOY AND THE THYROID

What about the risks of soy to the thyroid? Are the anti-soy critics making a “mountain out of molehill” as he claims? Are the effects “not significant or relevant unless you are deficient in iodine (which you can easily get from eating fish, seaweed or sea vegetables, or iodized salt)”? Hyman reaches that conclusion from just one study, a study that does not actually exonerate soy. In fact, more than seventy years of studies—including a human study from the respected Ishizuki Clinic in Japan—link modest to moderate soy consumption with thyroid disorders. Iodine deficiency is certainly part of the problem, but iodine repletion neither consistently nor reliably solves the problem. As for Hyman’s idea that iodine deficiency is not a problem, the National Center for Health Statistics reports epidemic iodine deficiency in the U.S., with intakes plummeting by more than 50 percent between surveys taken between 1970-1974 and 1988-1994, and continuing to decrease in the years since.

SOY INFANT FORMULA

As for babies, Hyman jumps on the “breast is best” bandwagon. He would prefer “no one feeds dairy or soy formula to their babies, but if you have to, try not to worry about it” and “don’t beat yourself up about it.” To reassure readers, Hyman cites a study published in the *Journal of the American Medical Association* (JAMA) in August 2001. Let’s take a good look at that study.

A team of researchers led by Brian L. Strom, MD, studied the use of soy formula and its long-term impact on reproductive health. They announced only one adverse finding: longer, more painful menstrual periods among the women who’d been fed soy formula in infancy. The male researchers dismissed this effect—one that has been painful and debilitating for many women—as unimportant and concluded that the overall results were “reassuring.”

In fact, the data in the body of the report was far from reassuring. Mary G. Enig, PhD, President of the Maryland Nutritionists Association; Naomi Baumslag, MD, Clinical Professor of Pediatrics at Georgetown University and President of the Women’s International Public Health Network; Lynn R. Goldman, MD, MPH, Environmental

More than seventy years of studies—including a human study from the respected Ishizuki Clinic in Japan—link modest to moderate soy consumption with thyroid disorders.

The committee failed to examine at least as many other studies, many of which linked soy formula to severe thyroid and gastrointestinal effects, especially when fed during the first few months after birth, a key developmental phase for infants.

Health Sciences, Johns Hopkins University; Retha Newbold, National Institute of Environmental Health Sciences, and other experts who analyzed the findings noted numerous flaws in both the design and reporting of this study, including:

- Failure to include mention of statistically significant, higher incidence of allergies and asthma in soy-fed infants in the study's abstract—the only part read by most busy health professionals and media reporters
- Glossing over or omitting from the main body of the report gynecological problems such as higher rates of cervical cancer, polycystic ovarian syndrome, blocked fallopian tubes, pelvic inflammatory disease, hormonal disorders and multiple births
- Manipulation of statistics by not evaluating still births or failure to achieve pregnancy (higher in the soy-fed women) but evaluating miscarriages (slightly higher in the dairy-formula-fed group)
- Excluding thyroid function as a subject for study (although thyroid damage from soy formula has been the principal concern of critics for decades). Nonetheless, thyroid damage can be surmised by the fact that the soy-fed females grew up to report higher rates of sedentary activity and use of weight-loss medicines
- Conducting the entire study by telephone interviews, asking subjective—in some cases highly personal and emotionally painful—questions and performing no medical examinations, laboratory tests or other objective testing. Breast development, for example, was gauged by asking participants at which age they first bought their bras.
- Providing no information on the ages at which formula feeding ended; the dose length or the quantity of the soy isoflavones (all of which are basic requirements of valid toxicology studies)
- Using the criteria of “trade school, college and post college” as a measure of intelligence, thus rating a graduate of a beauty school at the same level as someone who received a doctorate degree
- Following up infants who were given soy formula as infants for just sixteen weeks (though serious damage can occur for at least the first nine months in boys and the first six months in girls) and failing to obtain any information about whether the subjects in the study took soy formula after the initial sixteen-week study period or ate soy foods during childhood
- Using a study group of 282 soy-fed persons that was too small for most of the negative findings to become “statistically significant”

I personally heard scientists at the Fifth and Sixth Symposia on the Role of Soy in Preventing and Treating Chronic Disease held in San Diego and Chicago stand up and speak out about the dismal quality of this “reassuring” study. So who funded it? The National Institutes of Health with the International Formula Council (a trade group that represents formula manufacturers). It was carried out under the auspices of the Fomon Infant Nutrition Unit at the University of Iowa, a group that receives support from the major formula manufacturers, including Abbott, Nestle and Mead Johnson.

Hyman also feels comfortable touting the safety of soy infant formula because of a report issued in December 2009 by the National Toxicology Program (NTP) Center for the Evaluation of Risks to Human Reproduction (CERHR). Its fourteen-member committee concluded that the health risks of soy infant formula are “minimal” and that insufficient human or animal data exist to prove the likelihood of harm to the baby's developmental or reproductive health.

Before reaching this conclusion, the committee looked at seven hundred studies. Sounds like a lot, but the committee failed to examine at least as many others, many of which linked soy formula to severe thyroid and gastrointestinal effects, especially when fed during the first few months after birth, a key developmental phase for infants.

The panel also arbitrarily decided that reproductive damage had to occur during infancy although it is rare for symptoms to show up before puberty.

During public proceedings, the fourteen members—many of whose work and careers depend on funding from industry or government sources—were pressured by soy industry representatives who made it clear that a vote indicating “some concern” would damage soy's “healthy” image and jeopardize industry profits.

THOSE LONG LIVED OKINAWANS

So which people are thriving on lots of soy? According to Hyman, it's the Okinawans, the world's longest-lived people, who “for more than five millennia have eaten whole, organic and fermented soy foods like miso, tempeh, tofu, soy milk, and edamame (young soybeans in the pod).”

Interesting indeed that the Okinawans have been eating these foods for “five millenia,” when miso and tofu only entered the food supply about three thousand years ago. Tempeh came in to the food supply in Indonesia sometime between 1000 and 1595 AD. As for soy milk, the first historical reference is 1866, and it was first popularized in

WOULD YOU FEED YOUR CHILD SOY?

By Gail Elbeck, Investigative Researcher

Suppose the FDA told you that “soybean, genistein, daidzein” are included on their “Poisonous Plant Database.” Would you feed your baby soy-based formula, soy foods and beverages? Alarming, infant milk formulas are increasingly soy-added, as are vaccinations, a direct injection of soy phyto-poisoning. Suppose the FDA told you they acknowledge soy as an active “estrogenic endocrine disruptor,” well-known as developmentally damaging, while at the same time allowing increasing soy marketing to target infants and children. Suppose the FDA told you that soy phyto-estrogens are equally developmentally health-threatening as all other estrogens. Would you feed your child soy?

Suppose the FDA told you that they know soy phyto-poisonous estrogenic endocrine disruptors transfer to the fetus during pregnancy and nursing, and that sperm carries potential fertilization contamination caused by male soy consumption. Would you consume soy?

Suppose the FDA told you that the 2010 NTP Brief on soy formula reports that there is “Clear evidence of adverse effects of genistein in studies with gestational, lactational and post-weaning treatment,” and that “Daidzein has estrogenic activity of its own.” Would you allow poisonous-plant estrogenic endocrine disruptors to contaminate your fetus, infant and child? Suppose the NTP referred to soy as a “treatment.” Would you feed a phyto-poisonous “treatment” to your child?

Suppose the FDA told you they acknowledge more than seven hundred scientific studies proving soy to be extremely toxic to development, neurological function and reproductive health, especially during fetal, infant and child exposure. Would you feed your child soy?

Suppose the FDA told you that soy is loaded with fluctuating levels of phytic acid, heavy metals, several toxic compounds, and inhibits essential enzymes necessary for normal development. Would you feed your child soy? Suppose the FDA told you the 1999 FDA Federal Register reports, “GRAS status of soy protein food ingredients did not include a thorough evaluation of the safety of potentially harmful components, e.g. lysinalanine, nitrites, and nitrosamins, trypsin inhibitors, phytates and isoflavones (estrogens).” Would you feed soy-poisons to your child?

Suppose the FDA told you soy phyto-poisonous estrogenic endocrine disruptors are *not* FDA approved as safe or nutritious. Would you feed soy to your child? Suppose the FDA told you that the main soy formula ingredients—corn syrup, soy and sugar—are each developmental poisons. Would you feed your child soy formula?

Suppose the FDA told you ongoing scientific studies reported by the best NIEHS scientists, including Doerge, Sheehan, Newbold, and Chang, along with multiple NIH scientists and physicians, report extensive developmental soy toxicity. Would you feed your child soy? Suppose the FDA told you about the multitude of detailed scientific studies proving the soy estrogenic endocrine disruptor toxicity causation of (irreversible) autism, seizures, mental retardation, allergies, asthma, thymus damage, hypothyroidism, immune deficiency disorders, damage to pancreas, liver, and kidney, diabetes, leukemia, multiple cancers, metastasis, gender chaos and infertility, homosexuality—pain and suffering for a lifetime. Would you feed your child soy?

Suppose the FDA told you that the National Toxicology Program (NTP) report concluded outrageous “levels of aluminum found in soy (600-1300ng/mL) infant formula compared to human milk level of 4-65 ng/mL,” and the CDC confirmation of “brain and bone disease caused by high levels of aluminum in the body has been seen in children. . . Aluminum from the mother can enter her unborn baby through the placenta.” Would you feed your child soy?

Suppose the FDA told you that cancer patients, male and female, are commonly told to stop eating soy products due to the sure threat of estrogenic endocrine disruptor causation of cancer metastasis, and that soy can interfere with prescribed hormone drugs. Would you feed your child soy?

Suppose the FDA told you people who struggle with infertility and reproductive disorders are commonly instructed to stop eating soy. Would you feed your child soy? Suppose the FDA told you they acknowledge the toxic soy-causation of extensive and irreversible destruction of developmental health. Would you feed your child soy?

Suppose the FDA continues to ignore a year-long submitted formal petition requesting appropriate soy-toxicity warning labels especially during developmental exposure, as well as withdrawal of soy-poisonous infant formulas. Would you feed soy to your beautiful healthy baby?

As you know, the FDA does not publicly reveal any of these multiple soy phyto-poisonous facts. American parents and their families painfully (and unnecessarily) suffer because of withheld FDA acknowledgment of established soy-toxicity, the worst FDA deception in American history.

Overwhelming evidence reveals that the FDA continues to protect the multi-billion dollar soy industry over and above the good health and well-being of fetus, infants, and children. The FDA refuses to warn against the existence of massive scientific evidence proving beyond any doubt that developmental soy-poisoning is highly capable of destroying the good health and well-being of children and adults.

Asia in the 20th century by Seventh Day Adventist missionaries from America.

Where might Hyman's careful research on the "healthy Okinawans come from?" Probably from the bestselling popular books *The Okinawa Program* and *The Okinawa Diet Plan* by Bradley J. Willcox, D. Craig Willcox, and Makoto Suzuki. The books seem to be where vegetarian John Robins obtained the information he includes in his article about this topic. Among other major blunders, the Willcox brothers claim that Okinawans who have reached the one-hundred-year mark in good health did so because of ample quantities of soy foods and canola oil in their diets. Yes, canola oil—the Canadian oil (Can-ola) that didn't even exist on the planet until a few decades ago! The Willcoxes also show confusion from page to page about just how much soy is eaten. In fact, the amounts vary widely from place to place in Asia, but nowhere is the average very high and everywhere it's treated as a condiment in the diet and not as a staple food. While it's certainly true that Okinawans regularly eat some soy, the evidence indicates they also enjoy a lot of fish and pork in their diet. And the primarily monounsaturated fat those centenarians ate over the course of their long lives was not canola oil but good old-fashioned lard. Yes, lard is a primarily monounsaturated fat.

REVIEWING THE RESEARCH

Hyman claims he has "reviewed reams of research" yet lists only three references at the conclusion of his article, the first of which is a review article by soy industry spokesperson Mark Messina, PhD. Hyman winds up by saying he's "eager to see the studies on soy and health." The bottom line: thousands of studies have been carried out over the past eighty years, many of which suggest risks and none prove safety.

Clearly it would be wise to advance the precautionary principle of "better safe than sorry." The precautionary principle has led the Israeli Health Ministry, French Food Agency and German Institute of Risk Assessment to issue warnings to parents and pediatricians. Warnings have also come from respected independent scientists, including Dan Sheehan, the retired senior toxicologist at FDA's Laboratory of Toxicological Research in Jefferson, Arkansas, Retha Newbold of the National Institute of Environmental Health Sciences in Triangle Park, North Carolina, Irvin E. Liener, PhD, professor emeritus at the University of Minnesota and the world's leading expert on antinutrients such as protease inhibitors, phytates, lectins and saponins, Lon R. White, MD, a neuro-epidemiologist with the Pacific Health Institute in Honolulu; and Mary G. Enig, PhD, the courageous scientist who first exposed the dangers of trans fats in the late 1970s. Alternative doctors with impressive records of reversing cancer such as the late Max Gerson, MD, Nicholas Gonzalez, MD and others have also put soy on their "do not eat" lists. Neurosurgeon Russell Blaylock MD, has strongly warned against soy's adverse effects on the brain and nervous system. None of these groups or individuals has been militantly "anti-soy." All have looked long and hard at the research, and have soberly and responsibly concluded that caution is warranted and that soy can put infants, children and adults at risk.

Time for Dr. Hyman to do some real homework and not just express his "eagerness" to know more. ☯☯

IN MEMORIAM: TWO DEDICATED ACTIVISTS LEFT OUR EARTH A BETTER PLACE



Brave activist for fresh raw cheese and farm freedoms, John Coles, on left, passed away in April. Pictured here with his two buddies, Harvey Ussery and Joel Salatin, John's enthusiasm and level headedness will be sorely missed. Our love goes to his partner and fellow activist Christine Solem.



Warrior against soy formula and protector of babies throughout the world, Dick James passed away peacefully in July. It was Dick and his late wife, Valerie who first alerted the world to the dangers of soy infant formula. His website, soyonlineservice.co.nz still educates thousands about the dangers of soy. He is survived by his children Tania and Chris.

Legislative Updates

CHAMELEON POLITICS

By Judith McGeary, Esq.

It seems every time a bad bill or Agri-Business program stalls, it just changes colors like a chameleon, and comes back. The fight against S. 510, the Food Safety Modernization Act, had been going well. More and more people were speaking up in support of common-sense changes to the bill, including the Tester-Hagan amendments to exempt local, small-scale producers and the Feinstein amendment to ban Bisphenyl A from food containers.

For months, the bill sponsors had been negotiating with Senators Tester and Feinstein to reach a compromise that would incorporate some version of their amendments. And then, suddenly, the bill sponsors released a “Manager’s Package” of the bill on August 13, 2010. The Manager’s Package is a revised version of the bill that replaces the version passed by the Committee, and it’s what the full Senate will vote on. Neither the Tester nor the Feinstein amendments were included in the Manager’s Package, even though we were told that negotiations continued.

So why choose to release it before an agreement was reached? It may be that the staffers simply wanted to get home for the August recess. But, on the same day that the Manager’s Package was released, a massive factory farm in Wright County, Iowa began a nationwide recall of its eggs. As the recall grew to almost half a billion eggs, and the news hit the mainstream press, FDA and groups claiming to speak for consumers told every media outlet that the egg recall proved that the Senate should pass S.510 as quickly as possible.

Never mind the fact that FDA has already adopted, under its existing statutory authority, regulations to reduce the incidence of salmonella in eggs. President Clinton had directed the agency to work on the issue back in 1999, but the agency did not adopt rules until 2009. These regulations went into effect in July 2010—without S.510.

And never mind the fact that FDA already has authority to inspect facilities like this and simply chose not to, despite a history of environmental violations by this precise farm. Instead the agency chose to spend its resources (and taxpayer dollars) on things such as pursuing raw milk and an armed raid on the Rawsome food club in Venice, California.

The only difference S.510 might have made to the salmonella outbreak would have been to give FDA mandatory recall authority, rather than relying on a voluntary recall. Yet there is no hint that the Wright County company refused or even delayed in issuing the voluntary recall. More fundamentally, this latest salmonella outbreak is merely a symptom of a much larger problem: the consolidation of our food supply in the hands of a few large companies. An outbreak this large could not have occurred in a local and regionalized food system.

Rather than solving the problem, S.510 will strengthen the forces that have led to this dangerous consolidation of our food supply. S.510 gives FDA vast new powers to regulate food producers, from telling farmers how to grow vegetables to requiring every jam maker to comply with extensive paperwork requirements. The bill also includes a provision that facilities must pay for their own re-inspection, creating a financial incentive for FDA to perform repeat inspections of facilities to raise money or to financially penalize a producer the agency doesn’t like.

While damaging small producers, S.510 does not address the causes of the food safety problems. The bill calls for increased inspections and extensive paperwork, but it dodges the issue of the source of the bacterial contamination: manure, particularly manure from grain-fed cattle and intensive confined animal feeding operations (CAFOs). The FDA inspection of the chicken facilities that caused the salmonella outbreak (belatedly conducted after the recall) revealed

Judith McGeary is an attorney and small farmer in Austin, Texas, and the Executive Director of the Farm and Ranch Freedom Alliance. She has a B.S. in Biology from Stanford University and a J.D. from the University of Texas at Austin. She and her husband run a small grass-based farm with sheep, cattle, horses, and heritage breed poultry. For more information about NAIS and what you can do to stop it, go to www.farmandranch-freedom.org or call (254) 697-2661.

In the end,
the bill does
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food safety
system.

a sickening image of hundreds of thousands of chickens kept under the most unsanitary conditions imaginable. Among other things, the report noted that "Uncaged birds (chickens having escaped). . . were using the manure, which was approximately eight feet high, to access the egg laying area." In other words, hens were climbing on top of the piles of manure in order to reach the feed within the cages. "Chicken manure located in the manure pits below the egg laying operations was observed to be approximately 4 feet high to 8 feet high" in multiple locations, built up to the extent that the manure forced doors outward and allowed rodents access to the indoors. Yet neither S.510 nor any other proposal in front of Congress or FDA even tries to reduce the growth of intensive confined feeding operations, which create the perfect conditions for bacterial contamination.

In the end, the bill does nothing to address Big Ag's control over FDA, so the agency will almost certainly continue to target small producers rather than the real culprits in the food safety system. And as small farmers and local food producers are driven out of business, consumers will be deprived of their choices to obtain safe and healthy local foods from producers they

know and trust.

The fight to include the Tester-Hagan amendments is not over, and even if the bill passes, we will continue to have opportunities to fight for our local food producers during the rule-making process. For the latest information, go to www.FarmAndRanchFreedom.org.

NAIS UPDATE

As discussed in previous issues of *Wise Traditions*, in February 2010, Secretary Vilsack announced that the USDA would drop its plans for the National Animal Identification System (NAIS) and re-focus its efforts on a "new framework" for animal traceability. The Secretary stated the new framework would apply only to animals that cross state lines and would encourage the use of low-tech methods of identification.

The USDA's announcement sparked widely divergent reactions. Groups representing independent farmers and local consumers applauded the USDA's decision. But the proponents of NAIS, namely the Big Ag and Big Tech groups, expressed disappointment and issued statements about the horrible things that could supposedly happen without a centralized ID system. These pro-NAIS entities quickly regrouped and an-

SOME TALKING POINTS ON S. 510 FOOD SAFETY LEGISLATION

- Proponents of S.510 claim that the bill allows an exemption for "farms" from the requirements for facilities, but the language of the exemption is extremely narrow. A "farm" is not a "facility" only if the farm does not sell any processed goods. The definition of processing is extremely broad and covers almost everything other than fresh-cut produce. So a farmer who makes sun-dried tomatoes, jams from their own fruits, fermented vegetables, or other value-added products would not be a "farm" under this definition and would be subject to the bill's HACCP-type requirements for "facilities."
- Moreover, there are no exemptions in the bill from the FDA's "produce safety standards," which will govern how farmers can grow and harvest their crops. The only caveat is that the new standards cannot conflict with the organic standards, but this only applies to certified organic operations. Many small sustainable farmers are not certified by USDA because of the expense and paperwork burdens. Moreover, while not conflicting with certified organic standards, the FDA can still add additional, burdensome and unnecessary requirements even for certified organic producers.
- We cannot effectively address microbiological contamination of produce without addressing CAFOs. There's excellent science showing that *e. coli* O157:H7 is rarely found in wildlife or grass-fed cattle, but is much more common in concentrated, grain-fed cattle. The continued avoidance of this issue creates a huge loophole in the legislation.
- Substituting paperwork inspections for actual inspections does little to improve food safety, while providing political cover for large companies. Congress needs to focus resources on actual inspections, not HACCP.
- The GAO and others have identified that one of the core problems with food safety is the consolidation of our food supply, which allows contamination at one farm or in one plant to sicken thousands of people across the country. Yet the advocates of S.510 simply ignore the threat of increasing consolidation. Any food safety bill should include an analysis of how its requirements would affect small, local producers, and encourage decentralization. This is not just about fairness for the producers themselves, it's a necessary piece of addressing food safety.
- The bill does not respect small, local and organic farms, as claimed. On the contrary, it appears to be based on the myth that all food should be subject to FDA regulation in order to be safe, and it leaves FDA with extensive discretion over even the smallest of farms and food producers.

nounced plans to adopt “model regulations” (i.e. NAIS-type regulations) at the state level.

But the issue is also still far from over even at the federal level. Despite USDA’s announcement, Big Ag and Big Tech are pushing for a more expansive federal program. And key bureaucrats who developed NAIS continue to work within the agency, and they do not seem to have changed their views despite the announcements from the top.

Under the new traceability program, USDA established a “Regulatory Working Group” that was charged with creating performance standards for the program. These standards determine how quickly states and tribes must be able to perform animal traceback activities. In May, the Working Group released four proposed standards:

1. The State where the animal is located must notify the State or Tribe where the animal of interest was originally identified: 95 percent within one business day.
2. The State or Tribe where the animal of interest was officially identified must identify the “traceability unit” in which the animal was identified: 75 percent within five business days, with a later phase requiring 95 percent within two business days.
3. The State where the animal is located must

notify the State or Tribe from which the animal was last shipped: 95 percent within seven business days, with a later phase requiring 95 percent within three business days.

4. The State from which the animal was last shipped must identify the “traceability unit” from which the animal was shipped: 75 percent within five business days, with a later phase requiring 95 percent within two business days.

The USDA has held eight public meetings on the new proposal, and I attended both the Colorado meeting in May and the Texas meeting in July. Many farmers, sale barn owners, horse owners, and consumers also came, and we raised many concerns.

- What is the basis for the new proposal? While the “performance standards” are less stringent than those of NAIS, they still lack a scientific basis. At my breakout table, a USDA vet stated that the performance standards were based on the “experience” of the state vets and regulatory officials. While experience is important, why is their experience prioritized over the experience of animal owners who deal with animal health every day? Before imposing any new

How can the public provide input when the people who drafted the proposal can’t even explain it clearly?

THE PROPOSED TESTER-HAGAN AMENDMENT

The Tester-Hagan Amendment to S. 510 would exempt facilities (including on-farm facilities) that have an adjusted gross income of under \$500,000. This would protect small farms and businesses that process foods, such as people who make bread, jams, and cheeses. These businesses would still have to comply with the local and state regulations governing commercial kitchens and retail food establishments.

Opponents to the amendment contend that a business with an adjusted gross income of \$500,000 is not a “small” business. However, the Small Business Act defines “small business” as one that grosses under \$750,000. Using adjusted gross income does allow for some deductions, but not all of the costs of running a business. A business with \$500,000 adjusted gross is not “Big Agriculture.” These are precisely the types of small-scale processors who sell foods at farmers markets and through local co-ops.

Consider Kraft Foods, which grossed over \$40 billion in 2009, with a net profit of \$3 billion. Or Smuckers, with gross sales of \$3.75 billion in 2009 and a profit of \$1.2 billion (<http://financials.morningstar.com/income-statement/is.html?t=SJM®ion=USA&culture=en-US>). So even if you were to treat the exemption as applying to profit (which would make it much broader than it actually is), it would exempt businesses that make less than one-one-thousandth of the money that large agribusiness companies make.

With respect to farms, the proposed amendment would exempt farmers who sell more than half of their products directly to consumers, restaurants, hotels and institutions. These are the farms that provide fruits and vegetables to people through CSAs, farmers markets, local restaurants, and farm-to-school programs.

Over one hundred fifty groups have signed on to the letter supporting the Tester-Hagan amendments: <http://farmandranchfreedom.org/sff/Amend-S510-June-7.pdf>. These groups represent a mix of both conservative and liberal organizations, together with local co-ops from around the country.

requirements on animal owners, the agency needs to provide solid scientific and economic analyses to show why these steps are needed.

- There is still no analysis of where the real problem lies. Is it truly an animal identification problem? Or are the problems with traceability due to bureaucratic inefficiencies or other issues? On the issue of animal health, where are the gaps?
- Government program personnel still assume that electronic ID is the best approach. While USDA has committed to using low-tech methods for the framework, there are repeated references to “progress over time,” and every government speaker emphasized the benefits of RFID tags. I asked whether USDA intended to analyze the effectiveness of the program before moving towards electronic ID, pointing to the success of the scrapie program using non-electronic ID. In response, Neil Hammerschmidt said there were no such plans. Dr. Wiemers went further, and contended that, while non-electronic ID has worked for the scrapie program, it is not sufficient for tracing all movements. Yet the advocates of electronic ID still fail to show that it is needed or cost-effective.
- The proposal itself is confusing and unclear. For example, there is no written definition of “traceability unit,” and we’ve heard three different definitions at three different public meetings. At the Colorado meeting, Colorado State Vet Dr. Roehr stated that it was a geographical unit and could be anything from the whole state to a set of counties to a county to an individual premises. At the Utah meeting, Montana State Vet Dr. Zaluski stated that the traceability unit was either a physical location or a group of animals. At the Texas meeting, Oklahoma State Vet Dr. Brewer stated that “ultimately” it is a premises. Three members of the RWG, with three different statements on what the term means! How can the public provide input when the people who drafted the proposal can’t even explain it clearly?

In August, I submitted written comments to the USDA on the new proposal, with the following recommendations:

1. USDA should provide data and analyses that identify the problem to be solved and provide a factual basis for developing an appropriate solution.
2. USDA should design the program to provide long-term support for low-cost, low-tech methods of identification, and avoid creating incentives for electronic identification.
3. USDA should clearly limit the program to interstate tracing only, and delete the portions of the Working Group’s proposal that address intrastate tracing.
4. The regulatory framework and supporting IT systems should connect identification numbers with contact information, not property identification.
5. The appointments to the Secretary’s new Advisory Committee on Animal Health should reflect the majority of animal owners, namely small-scale producers.

More detail on each of these recommendations is available at <http://farmandranchfreedom.org/sites/farfa/files/Comments-to-USDA-August-2010.pdf>

While the USDA develops its new proposal, the issue of animal ID remains contentious within Congress as well. The House Agricultural Appropriations Subcommittee and the Senate Appropriations Committee have both zeroed out the funding for animal ID in the 2011 Appropriations Bill. However, as noted by the Senate Committee, the funding may be reinstated later in the process.

The reasons for cutting funding vary, and the Chair of the House Subcommittee, Congresswoman DeLauro, stated: “We have spent over \$147 million on this program since 2004 We do not feel it is a good use of resources to fund NAIS until the agency develops a clear plan for a mandatory system with measurable goals, long-term funding levels, and a plan for successful implementation.”

I agree that Congress should not spend any more taxpayer dollars on the program. But the answer is not to create a mandatory program as DeLauro seeks to do. Rather, Congress and USDA should re-focus the agency on preventative measures to protect animal health rather than a traceability program that benefits Big Ag’s export market while burdening small farmers.



ANNUAL MEMBERSHIP DRIVE

WAPF’s annual membership drive takes place August through October. Memberships are the life-blood and strength of the Foundation; it is our thousands of members who allow us to be independent. The more members we have, the more we are able to do in the way of nutrition education. If each of our current members (almost 13,000 at this point) brought in just one new member by year’s end, think of how much more we could do!

Those who bring in five new members will receive a signed copy of the deluxe edition of *Nourishing Traditions*; sign up fifteen new members and receive a free full registration to our conference, *Wise Traditions 2010*. For details, contact Kathy Kramer at info@westonaprice.org.

A Campaign for *Real Milk*

A TALE OF TWO CALVES

by Michael Schmidt

In 1940, the West of Scotland Agricultural College at Auchincruive carried out a study comparing the health of calves fed on raw and pasteurized milk. The researchers observed two groups, each of eight calves, for ninety days. One group was given raw milk and the other was given pasteurized milk.

In the raw milk group, all the animals finished the trial without mortality. In the pasteurized milk group, two died before they were thirty days old, and a third died on the ninety-second day, two days after the experiment finished. The remaining calves in the pasteurization group were in ill health at the end of the experiment, while all of the animals in the raw milk group were in excellent health. The results were reported in an obscure journal, *Nature's Path*, March 1941.

Not a single agricultural college or university has seen fit to repeat this interesting experiment—with calves or with any other research animal—in the last seventy years. So, we decided to do our own experiment here at Glencolton Farms, involving just two calves, one fed raw milk and one fed pasteurized milk

In order to gain acceptance by the scientific community, you need to meet their demands and do a study involving a hundred to a thousand calves. Otherwise they will say that whatever results you achieve could have been due to chance. Of course, we could not do a study on this many calves. The experiment cost us five thousand dollars in milk alone. Since we don't have any corporate sponsors, this has been a significant cost for us as a small dairy.

In 1994, I asked the Canadian government

to carry out a research project jointly with our farm, but I received no answer. The simple fact that governments and universities refuse to do this research has given me even a greater confidence that the results we have seen with these two calves are credible and significant. In fact, our findings support those of Pottenger in his cat study as well as the West of Scotland calf experiment.

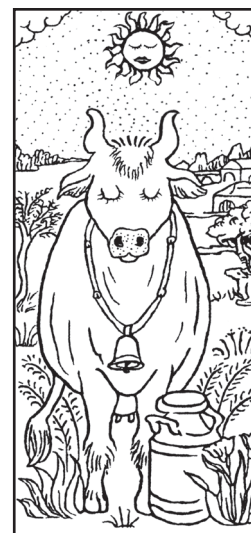
RESULTS

When the trial started, the two calves had roughly the same weight. The raw milk calf received four liters per day of raw, whole milk from our farm; the pasteurized milk calf received four liters of whole pasteurized (not ultrapasteurized) milk purchased from the supermarket. The calves also consumed hay and pasture.

Both calves were male, born on the farm. We raise and milk Canadienne breed cows; we have a closed herd, so the mothers of both calves had similar genetics.

For the first eight weeks, they gained weight at the same rate. Then the pasteurized milk calf started falling behind.

During the four-month trial, there was a constant difference in smell and the consistency of the manure. The raw milk calf had mostly well-formed manure with the normal smell you would expect. In contrast, the manure of the pasteurized calf was runny and the color mostly grey or almost white during the feeding trial. We did not treat either of these calves for any medical problem, although we would have done so had either calf developed a life-threatening condition.



Raw milk-fed calf at five months.



Pasteurized milk-fed calf at five months.

A Campaign for *Real Milk* is a project of the Weston A. Price Foundation. To obtain some of our informative *Real Milk* brochures, contact the Foundation at (202) 363-4394. Check out our website, www.RealMilk.com for additional information and sources of *Real Milk* products.

It was
when we
butchered the
calves
that the
differences
became most
obvious.

The hair on the raw milk calf was shiny and strong. On the pasteurized calf, the hair was dull and easily pulled out.

The alertness of the two calves was another major difference: the pasteurized milk calf seemed very uninterested in his surroundings and was lethargic, while the raw milk calf was more alert.

After about five months we could see that the pasteurized calf would have had difficulty surviving without medication and supplements, so at that time we butchered the two calves. At that time, the raw milk calf weighed 200 kg while the pasteurized milk calf weighed 115 kg.

Most significantly, the testicles of the pasteurized milk calf appeared to be about 30 percent smaller than the testicles of the raw milk calf.

AUTOPSY

It was when we butchered the calves that the differences became most obvious.

The liver of the pasteurized milk calf was pale; the liver of the raw milk calf was a dark color and of a stronger consistency. Likewise the kidney of the pasteurized milk calf was pale, while the kidney of the raw milk calf was a deep red color. The vet who was on hand for the slaughter was amazed at the appearance of the kidney and liver of the raw milk calf; he said the kidney and liver of the pasteurized milk calf looked “normal,” meaning that was what he was used to seeing.

There was a huge difference in the two digestive tracts. The stomach of the raw milk calf had solid contents without a disagreeable odor. The stomach contents of the calf fed pasteurized milk were runny and smelled disgusting.

TASTE TEST

We then sent the livers and the meat to Chef Chris McDonald, owner and executive chef of Cava Restaurant in Toronto. The meat and liver were labeled A and B, so the chef did not know which

was which. He prepared the livers and the meat in various ways and served them to the gathered patrons. There was an obvious difference in the livers: one was darker and firmer, the other pale and mealy. However, opinions were divided on the meat, and the differences were less obvious. The tasters were split on which calf tasted better. Perhaps most people are accustomed to eating calves fed pasteurized milk.

NOT A SCIENTIFIC TRIAL

Admittedly, I am a farmer, not a scientist. There are significant flaws in the scientific method of this trial, and some questions remain unanswered. We should, of course, have done this study with many calves, and the observers should have been “blinded,” that is, not knowing which calves received which type of milk.

Nevertheless, the results are in line with the findings of Francis Pottenger, and under normal circumstances would have elicited enough curiosity from university researchers to lead to a more scientifically conducted study. But these are not normal times, and most researchers have their hands tied by the exigencies of corporate funding.

We, however, are not so constrained, so we are going forward with further research on raw and pasteurized milk using two groups of rats over several generations. This time the study will involve a trained pathologist to oversee the feeding protocol, observe the development of the animals and carry out proper autopsies. Stay tuned! ☺

Michael Schmidt is a biodynamic dairy farmer in Ontario, Canada, who recently won a court case on the right to distribute raw milk through a cow share program. Visit his blog at <http://thebovine.wordpress.com>.

Our thanks to Christine Ross for her help with this article.



Kidney of raw milk-fed calf.



Kidney of pasteurized milk-fed calf.

UPDATES by Pete Kennedy, Esq., President,
The Farm-to-Consumer Legal Defense Fund

THE FOOD SAFETY BILL S. 510

On August 12, the Senate Health, Education, Labor and Pensions (HELP) Committee released the manager's package for the "Food Safety Modernization Act," a revised version of S510. The most alarming change in the bill is one that will potentially require "hazard analysis and risk-based preventative controls" (HARPC) for any farm (unless the farm is only selling products under USDA jurisdiction) that is, selling or otherwise distributing food products of the farm that have been "manufacture/processed." The definition of manufactured/processed in the Federal Code of Regulations (CFR) is extremely broad and includes terms like bottling, packaging and labeling [21 CFR 1.227(6)]. The HARPC provision requires that written safety plan identifying hazards that could affect food manufactured, processed, packed or held at a "food facility" and listing preventative controls that can be used to address those hazards.

The HARPC system is similar to HACCP, a food safety system currently used by various sectors of the food industry. The HARPC plan has particular implications for raw milk producers. The United States Food and Drug Administration (FDA) would be in charge of enforcing the requirements; there is no government agency more opposed to raw milk than FDA. FDA has long wanted a complete ban on the sale and consumption of raw milk and would now have an opportunity to regulate raw milk producers out of business if S. 510 passes into law.

A blueprint of how FDA could use HARPC requirements to drive small farms into bankruptcy can be found in the USDA enforcement of HACCP against small slaughter houses and meat processing plants. John Munsell, a former owner of a meat processing plant and current manager for the Foundation for Accountability in Regulatory Enforcement, summarized how USDA puts small slaughterhouses and processing plants out of business:

- "Hyper-regulation" of small plants.
- "Paper flow and daily HACCP records, most of which have no connection to safe food are swamping small plants."
- "Small plants have been targeted for higher number of enforcement actions."
- "Small plants lack staffs to challenge USDA's unethical demands. Easier prey."
- "Unlike big plants, USDA dictates what must be in their HACCP plans."

The HARPC requirement could do tremendous damage to the local food system. S. 510 represents a major threat to food freedom of choice. Please contact your Senator and urge him to either vote for the Tester-Hagen amendment (which would exempt small farms and processing plants) or kill the bill.

DOES STOMACH ACID DESTROY THE BENEFICIAL BACTERIA AND ENZYMES IN MILK?

Proponents of pasteurization have stated that it doesn't matter whether enzymes get destroyed during pasteurization because stomach acids would destroy them anyway. We asked Ted Beals, MD, for his input on this question.

According to Dr. Beals, enzymes are indeed sensitive to changes in pH, that is, to the acidity or alkalinity of the environment. With extreme changes, the enzymes might be damaged or destroyed. Any mild change in pH either up or down will also affect the activity of an enzyme. Different digestive enzymes work better in lower pH while others at higher pH. Thus it seems logical that the acidic environment of the stomach would diminish or destroy the ability of enzymes to function. But this is offset by the fact that fresh whole milk is a buffer, that is an agent that keeps the pH steady. (Pasteurizing, homogenizing and reducing the fat content of milk all reduce the buffering capacity.)

Buffers "neutralize" the alkaline or acid environment that comes into contact with the milk, reducing the influence of the acidic or alkaline environment on the milk. After all, breast milk contains many of the same enzymes as milk from cows or goats, and these enzymes play many beneficial roles in the digestive tract. It would not make biological sense to have these enzymes in the milk, only to be destroyed by the acid environment of the stomach or the alkaline environment of the small intestine.

Dr. Beals also points out that raw milk does not contain lactase, the enzyme that breaks down the disaccharide lactose. However, beneficial bacteria enter the milk as it is exiting the teat into the milk container. These bacteria may produce free lactases and they may convert lactose by their own internal metabolism. The buffering capacity of raw milk would allow these healthy bacteria to enter the small intestine where they can continue their work of digesting lactose. Such bacteria also contribute to the overall health of the intestinal tract. Raw milk contains several factors that support the proliferation of these bacteria, including bifidus factor and special sugars that serve as food for the bacteria. As with enzymes, it does not make biological sense for all these factors to be present in raw milk only to have them destroyed in the stomach.

FDA LAWSUIT

In a complex federal district court ruling, Judge Mark W. Bennett refused to grant a motion by the United States Food and Drug Administration (FDA) to dismiss a lawsuit filed against the agency by the Farm-to-Consumer Legal Defense Fund (FTCLDF) and eight other named plaintiffs. The lawsuit argues that federal regulations (21 CFR 1240.61 and 21 CFR 131.10) prohibiting raw milk for human consumption in interstate commerce are unconstitutional as applied to FTCLDF's members and the other plaintiffs named in the suit.

In his August 18 decision, Judge Bennett denied part of FDA's motion to dismiss while reserving judgment on the remainder. As part of his ruling, the judge ordered proceedings in the case to be stayed sixty days to allow plaintiffs time to decide whether to file a "citizen petition" with FDA. The petition would ask FDA to clarify its interpretation of the authorizing statutes and regulations giving the agency power to ban raw milk for human consumption in interstate commerce. If plaintiffs choose to file the citizen petition, the court would continue to delay the suit until the administrative proceedings were completed or until FDA failed to take action within the time the law requires. If plaintiffs declined to pursue the citizen petition, Judge Bennett indicated the court would reconsider FDA's motion to dismiss.

In Judge Bennett's view, the main question FDA needs to answer in the petition process is "whether § 1240.61 applies to and proscribes the conduct of (1) persons who travel from one state, where it is not legal to purchase raw milk, to another state, where it is legal to purchase raw milk, legally purchase raw milk, then return to the original state where they consume the raw milk themselves or give it to their friends or family members; or (2) a principal and agent who agree that the agent will obtain raw milk out-of-state, where it is legal to do so, and to deliver it to the principal in the principal's home state, where sales of raw milk are not permitted; or (3) a producer of raw milk who sells raw milk in an intrastate transaction to persons that he knows are from out of state."

All of the individually named plaintiffs in the lawsuit fit into one of the three scenarios described above. Section 1240.61 provides in part, "No person shall cause to be delivered into interstate commerce or shall sell, or otherwise distribute, or hold for sale or other distribution after shipment in interstate commerce any milk or milk product in final package form for direct human consumption unless the product has been pasteurized. . . ."

Judge Bennett sees the citizen petition as a way to resolve the question of "whether the plaintiff's conduct involves or affects 'interstate commerce' sufficiently to fall within the proscriptions of § 1240.61, and, still more specifically, whether the plaintiffs' conduct constitutes 'delivery [of raw dairy products] into interstate commerce' or 'distribution' of raw dairy products after shipment in interstate commerce."

Plaintiffs have survived the first round in the case. They have until October 18 to determine what their next course of action will be.

AMERICA'S FIRST COW SHARE PROGRAM?

An alert member found the following fascinating tidbit: Devon and Cornwall were the last ports of call for sailing ships departing for Britain's colonies abroad. In 1623, the British ship *Charity* brought "red cattle," one bull and three heifers to Edward Winslow, agent for Plymouth Colony, making Devons the first British cattle to set hoof on American soil. Cattle became an important source of wealth in the colony; the average cow sold for 28 pounds in 1628. So valuable were they that in 1627, Edward Winslow "sold unto Capt. Myles Standish his sixth share in the red cow," indicating that one cow was often shared by several families (www.hobbyfarms.com/farm-breeds/others-profiles/devon-2.aspx).

To agist is, in English law, to take cattle to graze, in exchange for payment. Agistment originally referred specifically to the proceeds of pasturage in the king's forests, but now means either (a) the contract. . . for taking in and feeding horses or other cattle on pasture land, for the consideration of a weekly payment of money, or (b) the profit derived from such pasturing. An agister is defined as "a farmer, ranchman, herder of cattle, livery and boarding stable keeper, veterinarian, or other person, to whom horses, mules, cattle, or sheep are entrusted for the purpose of feeding, herding, pasturing, training, caring for, or ranching."

Thus, agistment agreements have considerable historical precedent in English law; all but one American state recognizes the validity of agister contracts; and in many states, particularly Colorado, Virginia, Indiana and Tennessee, where sales of raw milk are illegal, many people are obtaining raw milk from their own cows, cared for by a local farmer through an agistment agreement.

CALIFORNIA

In what has been a year of increased raids and enforcement actions against raw milk producers and distributors around the country, no action has been bigger nor received more attention than the raid on the Rawesome Food Club (Rawesome) in Venice. On June 30 federal, state and Los Angeles County officials executed a criminal search warrant against Rawesome, a private food buying club whose store was not open to members of the general public. The officials were accompanied by police who entered the store with guns drawn; this was captured on video and later viewed by thousands on the internet.

According to Aajonus Vonderplanitz, president of Rawesome, the officials seized seventeen coolers of food, mostly raw dairy products and honey—even though the search warrant only called for the officials to take food samples. The county health department issued a notice that the store was now closed. Among the government agencies represented at the raid were the Food and Drug Administration (FDA), Federal Bureau of Investigation (FBI), the California Department of Food and Agriculture (CDFA), and the Los Angeles City District Attorney's office.

Rawesome has many affiliated private food buying clubs around the country. Vonderplanitz has long stood up to any federal, state or local government agency harassment of club members and the farmers providing them food. He stated that the raid on the Venice store was most likely due to his recent actions to protect dairies in Wisconsin, Pennsylvania and Illinois that had been raided by state and federal agencies.

On the day Rawesome was raided, state and county government officials also executed a criminal search warrant against Santa Paula farmer Sharon Palmer; it marked the third time a criminal search warrant had been executed against Palmer in the past year and a half. Her suspected crime was boarding goats owned by Rawesome and providing raw milk and raw milk products to its members. Shortly after the raid, Rawesome and Palmer mutually agreed to terminate the boarding contract.

On July 1, an attorney for Rawesome along with store manager, James Stewart, appeared at a Los Angeles County administrative hearing to address a violation cited against the club for operating their store without a permit. The attorney challenged the jurisdiction of the county over the store; the county officials ignored the challenge and instead presented statements admitting violations for Stewart and the attorney to sign. Both refused, with the attorney informing the officials that the store would be open to its members. On July 3, Rawesome reopened without incident.

The raid on Rawesome was widely criticized for its police state tactics; possibly for this reason none of the agencies participating in the raid followed up with any further action against the buying club. Instead, the Los Angeles Department of Building and Safety was the next to go after Rawesome, issuing a closure notice to the store on August 18 for alleged building code violations. Rawesome is working with a building and safety engineer to establish that the property did not violate building or zoning standards.

The fallout from the raid extended beyond California; some of the raw cheese confiscated during the raid was manufactured by a farmstead cheese operation, Morningland Dairy of Mountain View, Missouri. When a sample of the dairy's cheese taken by CDFA tested positive for *Listeria monocytogenes*, the Missouri State Milk Board and FDA pressured the dairy to recall over 60,000 pounds of cheese. There had been no reports of anyone being ill from consuming the Morningland Dairy cheese.

Vonderplanitz stated his intent to sue the government agencies and officials involved in the raid. In his words, "We have a David and Goliath situation here. We must produce the funds to produce this raid in judicial and civil courts now before we do not have another opportunity."

IDAHO

House Bill 675 was signed into law on April 11. The new law requires any dairy farmer operating herdshare programs to obtain a permit if that farmer has more than seven cows, fifteen sheep or fifteen goats in the herd. Under the new law, the owner of a share may obtain raw milk and raw milk products if there is a written contract between the owner and the farmer that provides written evidence of a bona fide ownership in the herd; the contract must also include the boarding terms for the herd, a provision that the owner is entitled to receive a share of the milk or milk products from the herd, and a notification that the milk or milk products are raw and not pasteurized. Any dairy farm operating

a shareholder program with more than three cows, seven sheep or seven goats must comply with milk testing requirements specified in the law. All shareholder dairies must register with the state and must test their animals each year for tuberculosis and brucellosis. Under prior law, herdshare programs were not regulated; the law on the sale of raw milk has not changed. Those producers obtaining a retail raw milk permit can still sell raw milk on the farm and in retail stores.

MASSACHUSETTS

On August 6, the Massachusetts Department of Agriculture and Resources (MDAR) mailed Sandisfield dairy farmer Brigitte Ruthman an “order to cease and desist the distribution of raw milk.” Ruthman operates a one-cow shareholder dairy and distributes raw milk to the three people that have invested in the cow. If MDAR believed the order would convince Ruthman to stop distributing raw milk and quietly go away, the agency was mistaken.

The farmer sent a copy of the order to David Gumpert, declaring that she was going to continue on with the cow share program. Shortly after Gumpert posted a story on his blog about the order, MDAR sent an inspector to Ruthman’s farm to personally deliver the “cease and desist” order to her. Ruthman was enraged about the trespass on to her property and wound up retaining an attorney to contest the “cease and desist” order.

On August 24, Ruthman’s attorney, Douglas Wilkins, sent a letter to MDAR requesting that the department revoke the order, accusing MDAR of violating Ruthman’s due process rights by not granting her notice and an opportunity to be heard prior to issuing the order. The department subsequently revoked the order but did not change its position that anyone operating a cowshare or herdshare program needed to be registered and licensed with the state.

Ruthman had previously refused to get licensed because the costs of complying with the licensing requirements were not affordable for her one-cow dairy. If MDAR does not change its position on cow shares, Ruthman is intent on going to court to obtain a ruling that her cowshare program is not under the state’s jurisdiction.

MINNESOTA

The Minnesota Department of Agriculture (MDA) has continued its efforts to limit the sale of raw milk in the state, with the department’s focus centering on the farm of Michael and Diana Hartmann in Gibbon [see *Wise Traditions* Summer 2010 issue for background]. On June 16, inspectors from MDA along with law enforcement officials executed a second criminal search warrant against the Hartmann farm, embargoing all meat and dairy products that inspectors found on the farm that had not already been embargoed during a prior raid on May 26. The inspectors also issued the Hartmanns an order to cease selling all products of the farm except poultry and eggs.

While the inspectors were at the farm, they took numerous samples for pathogen testing. MDA tested the samples for all the major pathogens except *E. coli* O157:H7—an interesting decision since MDA had publicly declared that raw milk from the farm allegedly tainted with *E. coli* O157:H7 had been responsible for making at least eight people ill. MDA had publicized the results showing the strain of *E. coli* O157:H7 found in manure and environmental samples taken on the Hartmann Farm was indistinguishable from the strain found in stool samples taken from the sick individuals.

Why didn’t the state test for a pathogen responsible for the illness claimed to have been caused by the farm? Was this because a negative test for *E. coli* would overturn their order to the Hartmanns prohibiting the sale of meat and dairy products?

MDA followed up on the embargo orders by petitioning the Sibley County Court for a condemnation order so that the embargoed food could be destroyed. The Hartmanns and their attorney, Zenas Baer, took advantage of the petition by filing a counterclaim that asked for the embargo and the order not to sell any products except poultry and eggs be lifted. From mid-August into the beginning of September, a marathon series of hearings on the condemnation petition took place at the Sibley County Courthouse. The state’s strategy was to persuade the court that the embargoed food should be destroyed due to unsanitary conditions at the farm—not because *E. coli* O157:H7 was found in samples taken there.

The Hartmanns and MDA were not the only parties to the case. An organization called The Foundation for Consumer Free Choice (FCFC) as well as individuals who were customers of the Hartmanns successfully moved to intervene as third parties. FCFC consisted of many of the Hartmanns’ customers; the individuals were customers whose names were on specific products embargoed by MDA and they wanted those products released by the judge to them.

The enforcement actions taken by MDA were not only against the Hartmanns but also their customers. On June 10, MDA and local government officials as well as three plain-clothes policemen executed a criminal search warrant at the private residence of a family whose “crime” was to let the Hartmanns use their residence as a dropsite to distribute products to the farm’s customers. The family neither handled money for the Hartmanns nor distributed any products for the farm, but that didn’t stop the MDA and local government officials from searching their refrigerator. The family later found out that one of the MDA officials present during the search had interviewed four of their neighbors, attempting to get incriminating statements from them about the family.

On June 15, shortly after the raid on the private residence, officials from MDA and Minneapolis Health Department paid a visit to the Traditional Foods Warehouse (TFW); the store features foods made by local small-scale producers and is open only to members of a private buying club. The officials conducted an inspection and wound up embargoing every single food item in the store. The officials left an order with the store owner, prohibiting TFW from reopening until a food establishment permit had been obtained from the Minneapolis Health Department.

There was no need for MDA to treat the warehouse like a criminal enterprise. TFW had made no secret of its existence; the *Minneapolis Star-Tribune* had run two major stories on it since TFW’s opening in September 2008. There had never been a single complaint filed against the warehouse. MDA could have made its position known without having to embargo every food item in the warehouse.

Despite attempts by TFW’s principal owner to cooperate and get licensed, as of the second week in September, the warehouse had not been issued a permit and remained closed to its members. Some of the embargoed food had been released to its owners and some had been destroyed; yet thousands of dollars of food remained embargoed at TFW.

SOUTH DAKOTA

On March 25, HB 1057 was enacted into law; producers selling raw milk are now required to get a Grade B permit and may no longer sell raw cream. Formerly, producers were allowed to sell raw milk and cream without any permit. Under the new law, any producer seeking to obtain the Grade B permit must have an enclosed facility with separate rooms for milking and bottling; handcapping is allowed. For those dairy farmers who cannot afford the cost of building a facility, an official with the South Dakota Department of Agriculture has stated that those dairies not able to meet the Grade B requirements would be able to distribute raw milk legally through a herdshare program which would not be regulated by the department. Raw milk can be sold on the farm, through delivery and at farmers’ markets by producers with a Grade B permit. [See *Wise Traditions* Spring 2010 issue for background on the new law]

WISCONSIN

On June 10, Department of Agriculture, Trade and Consumer Protection (DATCP) officials Jackie Owens and Cathy Anderson along with local police raided Vernon and Erma Hershberger’s Loganville Grazin’ Acres farm for a second time. The purpose of the raid was to execute an inspection warrant to check the Hershberger’s farm store to see whether there had been a violation of a holding order that prohibited the Hershbergers from moving any food located in freezers that the DATCP agents had taped during a June 2 raid of the farm [see *Wise Traditions* Summer 2010 issue “Raw Milk Update” for background]. The store was locked at the time the officials arrived; when asked to open the door, Vernon said he would if there was something in the warrant requiring him to do so. There was not and with the warrant not authorizing the use of force, Owens and Anderson left the farm empty-handed.

Four weeks later on July 8, the two officials returned—this time with eight policemen and a criminal search warrant. This time the officials were able to execute the warrant and search the store, taking a computer and business records with them back to Madison. DATCP has since turned over the evidence it has on the Hershberger’s case to the state attorney general’s office. There continue to be no cases of illness attributed to Grazin’ Acres nor have any consumer complaints been filed. There is no public health issue in this case; the only health issue is the loss of a source of healthy food for people who willingly entered into a private contract with the Hershbergers to obtain nutrient-dense food products.

For the latest developments on raw milk issues, go to www.thecompletepatient.com.

Those who have not joined the Farm-to-Consumer Legal Defense Fund are encouraged to do so. Membership applications are available online at www.farmtoconsumer.org or by calling (703) 208-FARM (3276); the mailing address is 8116 Arlington Blvd, Suite 263, Falls Church, VA 22042.

Healthy Baby Gallery



WAPF baby Shanit Khan Weaver, son of Emma Greenslade and Grant Weaver is pictured here at six months old. Born on Christmas Eve, his parents report that he is one of the happiest babies ever to exist! He has just begun eating solids, including egg yolks, fermented sweet potato and kefir and loving it! He sleeps well and is much loved by his brothers and sisters.



Ella Mae Danley was born on June 17th at over eight pounds. During pregnancy mom consumed raw milk, cod liver and butter oil, pastured eggs and butter, grassfed beef and lamb, and coconut oil. Dad and mom are very grateful for the midwives at Vanderbilt Medical Center and their excellent care and understanding. Mom, dad, baby, and doula were given all needed space for a completely natural birth. Ella is a sweet and beautiful baby. Thank you to WAPF for your excellent dietary advice from Chad and Christina Danley.



Beautiful Annelise Farfalla Rice was born at home, after a short labor. The third traditional foods baby in her family, her mommy ate lots of pasture-raised goat meat and raw goat milk, and eggs, all from her family's farm, as well as raw liver once a week, fermented cod liver oil, raw fish, and lots of cultured dairy products. Anna is enjoying mom's nutrient-dense breast milk.

Please submit your baby and raw milk granny photos to Liz Pitfield at liz@westonaprice.org. Be sure to label photograph with the full name of the baby.

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The Weston A. Price Foundation currently has 458 local chapters,
 484 of which serve in forty-nine U.S. states and 75 in eighteen other countries.
 A big welcome to new chapter leaders from the UK and Qatar!

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WAPF AT THE INDIANA SUSTAINABLE LIVING FAIR



WAPFVolunteers provide priceless nutrition informatoin at the Indiana Sustainable Living Fair. From left to right Marian Corya, Leslie Gray (co-chapter leader), Mark Cox (co-chapter leader), Petroula Douramakou and Chef Joshua Henson.

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LOCAL CHAPTER BASIC REQUIREMENTS

1. Provide information on sources of organic or biodynamic produce, milk products from pasture-fed livestock (preferably raw), pasture-fed eggs and livestock and properly produced whole foods in your area.
2. Provide a contact phone number to be listed on the website and in our quarterly magazine.
3. Provide Weston A. Price Foundation materials to inquirers, and make available as appropriate in local health food stores, libraries and service organizations and to health care practitioners.
4. Provide a yearly report of your local chapter activities.
5. Be a member in good standing of the Weston A. Price Foundation.
6. Sign a contract on the use of the Weston A. Price Foundation name and trademark.

OPTIONAL ACTIVITIES

1. Maintain a list of local health care practitioners who support the Foundation's teachings regarding diet and health.
2. Represent the Foundation at local conferences and fairs.
3. Organize social gatherings, such as support groups and pot luck dinners, to present the Weston A. Price Foundation philosophy and materials.
4. Present seminars, workshops and/or cooking classes featuring speakers from the Weston A. Price Foundation, or local speakers who support the Foundation's goals and philosophy.
5. Represent the Weston A. Price Foundation philosophy and goals to local media, governments and lawmakers.
6. Lobby for the elimination of laws that restrict access to locally produced and processed food (such as pasteurization laws) or that limit health freedoms in any way.
7. Publish a simple newsletter containing information and announcements for local chapter members.
8. Work with schools to provide curriculum materials and training for classes in physical education, human development and home economics.
9. Help the Foundation find outlets for the sale of its quarterly magazine.

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CHAPTER RESOURCES

Resources for chapter leaders can be accessed at www.westonaprice.org/chapters, including our new trifold brochure in Word format and PowerPoint presentations.

LOCAL CHAPTER LIST SERVE

Thank you to Suze Fisher of our Maine chapter for setting up a local chapter chat group. New chapter leaders can sign up at <http://groups.yahoo.com/group/wapfchapterleaders/>

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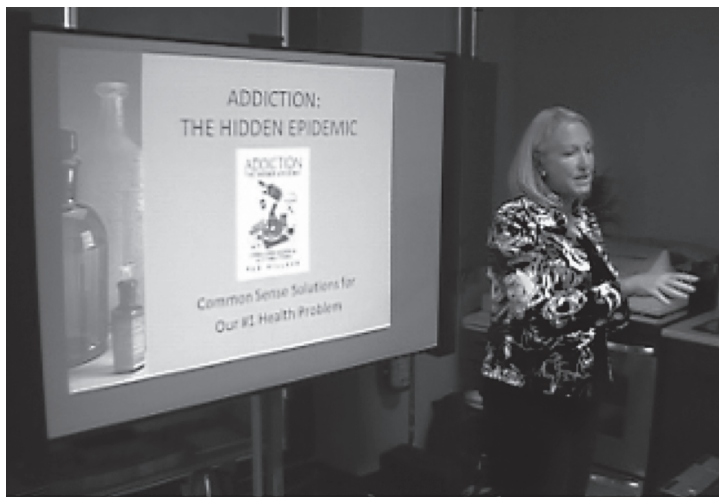
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PAM KILLEEN ADDRESSES THE CAMBRIDGE & KITCHENER-WATERLOO CHAPTER



On June 29, the Cambridge & Kitchener-Waterloo chapter of Ontario, Canada hosted Pam Killeen, author of *Addiction: The Hidden Epidemic*. A frenzied lifestyle along with unhealthy food choices is not only contributing to chronic disease, but also to an epidemic of mood disorders and addiction. Pam discussed the ways that nutrient-dense food can support our mental well-being.

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Windmill Meadows Farm, Washington County, Grass-based sustainable family farm. Our focus: healthy, well-balanced soil produces healthy livestock on healthy grass for healthy, good-tasting food products. Grass-fed dairy, beef, goats, pasture-based poultry: (broilers & layers). Availability to Washington DC markets, (301)739-5258. 11/4

MI

Creswick Farms. Dedicated to raising healthy, happy animals—lovingly cared for as Mother Nature intended—which provide high-energy, nutritious and delicious food sources for health-conscious individuals. No antibiotics, steroids or GMOs ever fed to our animals! (616) 837-9226, www.CreswickFarms.com. 11/4

FARM PRODUCTS BY STATE

MN

Farm on Wheels offers animals raised on green grass & certified organic by MOSA. Nutrient-dense cuts of beef, lamb, chicken, turkey, goose, duck, pork, lard, butter & eggs. No corn or soy. Farmers Market year round in St. Paul, Prior Lake, Northfield, Linda (507)789-6679, www.farmonwheels.net. 12/1

NJ

Fresh Food from fertile soil. River Birch Micro Farm Member. Farm-to-Consumer Legal Defense Fund. Eggs from chickens on grass pasture. Fruits, nuts and vegetables. Farmer/Soil Scientist Joseph Heckman, Ph.D. 19 For-man Ave Monroe Township, New Jersey 08831 (732)605-0444. 11/3

Full food farm ecosystem in NorthWest NJ seeks member/partners to build community for third growing season. We provide free-choice weekly pickups year-round of pastured animal products, seasonal and stored vegetables, with future plans for beans, grains, fermented foods. howlingwolffarm@embarqmail.com. Funding Needed. 13/3

NY

Raw milk from dutch belted cows organic certified farm-grass fed. Call us for other products. Ana Lups, Pleroma Farm, Hudson, NY (518) 828-1966. 11/3

New York Buyers Club. Certified organic grass-fed dairy products from Jersey cows. Eggs from pastured chickens. Grass-fed beef, pork and chicken. Fermented foods, Green Pasture Products, soaked and dried nuts and raw honey. **Will ship.** (717)768-3437. Pleasant Pastures. 11/3

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FARM PRODUCTS BY STATE

OH

Ber-Gust Farm - pastured, miniature Jersey dairy cows. All natural beef, pork, poultry and produce. Also jams, jellies, honey and apple butter. Waynesfield Ohio. (419)230-2195, (419) 230-2194 www.ber-gustfarms.net. 12/1

PA

Bareville Creamery. 100% Grass-fed offers Raw cultured butter from our grass-fed cows. **We will ship to you.** \$8.00/ lb plus shipping, or visit our farm to pickup. Daniel & Katie Zook, Leola PA, (717)656-4422. 11/4

Certified organic grass-fed dairy. Raw milk cheeses, cottage cheese, yogurt, sour cream from Jersey cows. Eggs from pastured chickens. Grass-fed beef, pork, chicken, rabbit & turkey. Call for information. **We ship.** (717)768-3437 Pleasant Pasture Organic Acres. 11/4

Grass-fed organic raw milk and dairy food: 100% grass-finished beef and lamb, pastured pork, chicken and turkey, wild Alaskan salmon, fermented vegetables, raw honey, maple syrup and more. **Long Island drop.** Paradise Pastures, Paradise, PA (717) 687-6346. 13/3

New location for an attractive variety of quality grass-fed and free-range products, located near the Lancaster and Chester County Line. For more information and/or questions, please call (717)768-3263, Elam & Linda Stoltzfus, Narvon Natural Acres, Narvon, PA. 11/4

Nittany Valley Organics is offering certified organic grass-fed raw milk cheeses. Cheddar, Smoked Cheddar, Monterey Jack, Yogurt Jack, Pepper Jack, Colby, and Himalayan salted Baby Swiss. Looking for retail distributors, reasonable prices. **Ship Mondays only.** Place your order by Saturday noon please. Customers for IN, IL, & MI please call (574)825-1596 ext 1. CT, MA, ME, RI, NY, & VT call (585)765-9845 Cheesemaker: Mark Stoltzfus Jr. (570)726-7799 ext. 3. 11/3

Owens Farm, Sunbury, PA, grass-fed lamb, pastured Tamworth pork (fed soy-free grain), pastured meat chickens, soy-free heritage chickens, raw honey, sheep camp, Farm tour, Adopt-A-Sheep and more. Visit Owens Farm www.owensfarm.com (570)286-5309. info@owensfarm.com. 11/3

FARM PRODUCTS BY STATE

Raw milk from 100% grass-fed cows, yogurt, eggs from free-range chickens, 100% grass-fed beef and raw milk cheese. Ira & Mary Beiler. (570)278-5881. 11/4

Raw Dairy products from our no-grain, grass-fed Jersey cows. Milk, cream, yogurt, kefir, and cheeses: Cheddar, Colby, Swiss, Havarti, Gouda, Gruyère. Free-range, pasture-raised and organically-fed broilers. No added hormones or antibiotics. **We ship.** Shady Acres, Elizabethtown, PA. (717)361-1640. 11/3

Raw dairy products from our 100% grass-fed cows Whole milk, heavy cream, cream cheese, sour cream, cottage cheese and butter. All made here on our 13-acre Chester County Farm. Free from hormones and synthetics. Samuel and Esther Fisher, (610)273-2076. 12/1

Raw milk cheese from our grass-fed Jerseys, made on our family farm with Celtic sea salt. No grain feed. Also grass-fed beef and lamb and pastured chickens, turkeys and eggs. No hormones or synthetics. On-farm sales. Wil-Ar Farm, Newville, PA. (717)776-6552. 13/4

Raw milk cheeses from organically managed, 100% grassfed Jersey cows. Retail and wholesale. Prices start at 4.75/pound, we do mail order cheese. Raw milk and organic eggs available. Eastern PA, 15 minutes N of I78, 153 Martins Rd. Pine Grove, PA 17963 (570)345-3305. 11/4

TX

Grassfed beef from our heritage cattle, born & raised on our 110-yr-old Shudde Family Ranch near San Antonio. Healthy soil, to healthy grasses, to healthy cattle, to healthy nutrition-dense beef for healthy families. Inspected, frozen. **We ship.** www.ShuddeRanch.com 866-392-1510. *12/2

VA

Cow/Herd Shares available, with member in Local Kine (M.I.L.K.) Project In Fauquier County at Western View Farm, 2028 Laws Ford Rd., Catlett, VA, 20119 For information call Martha Bender, (540)788-9663. 12/2

FARM PRODUCTS BY STATE

Mount Vernon Farm raises 100% Grass-Fed Beef & Lamb and Pastured Pork. We have an on farm store and buyers clubs throughout Northern and Central Virginia. Contact us at 540-987-9559 or mtvfarm@gmail.com. www.mountvernonfarm.net. *12/2

Salatin family's Polyface Farm has salad bar beef, pig-aerator pork, pastured chickens, turkeys and eggs, and forage-based rabbits. Near Staunton. **Some delivery available.** Call (540)885-3590 or (540)887-8194. 11/3

Virginia Buyers Club. Certified organic grass-fed dairy products from Jersey cows. Eggs from pastured chickens. Grass-fed beef, pork & chicken. Fermented foods, Green Pasture Products, soaked & dried nuts & raw honey. **Will ship.** (717)768-3437. Pleasant Pastures 11/3

VA/WV

Church View Farm has pasture raised chicken and lamb, free range eggs, raw honey and a wide variety of fruit and vegetable crops. See www.churchviewfarm.info Near Romney, WV, just west of Winchester, VA, **Some delivery available.** (304)822-3878 or churchviewfarm@frontiernet.net. 11/4

WI

Certified, Organic, soy-free dairy, raw milk cheese, cultured butter, cream, yogurt, cottage cheese, colostrum. Also full line of grass-fed beef, pastured chicken, turkey and free-range eggs. Raw honey, maple syrup, and extra virgin organic coconut oil also available. **Will Ship.** Grazin Acres LLC (608)727-2632 located 1 hr NW of Madison. 11/3

CANADA

Nittany Valley Organics offers certified organic grass-fed raw milk cheeses. Cheddar, Smoked Cheddar, Monterey Jack, Yogurt Jack, Pepper Jack, Colby, & Himalayan salted Baby Swiss. Cheesemaker: Mark Stoltzfus Jr **Shipping.** www.HealthyBeloved.com (888)510-2669. 11/3

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of the future
will be the making
of a comfortable living
from a small piece of land.
Abraham Lincoln

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12/1

BUTTER and cheese. Nutrient rich summer gold butter and cheese from PastureLand Cooperative. Our products are made from the milk of 100% grass-fed cows grazing certified organic pastures in southeastern Minnesota. Shipping available. Call (888)331.9115 for more information. www.pastureland.coop.

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12/1

SAUERKRAUT, RAW ORGANIC. Fresh, Raw, & Alive! Gold Mine's Fresh Organic Sauerkraut is abundant in friendly, living micro-organisms, powerful aids to digestion and assimilation. Independent lab tests show 7.8 million CFU's of live lactobacillus and bifidobacterium species per gram! Aged in special ceramic crocks that allow the growth of friendly flora in a safe environment, Gold Mine's sauerkraut is, according to the most discriminating "kraut connoisseurs," absolutely delicious! Featured at the annual conference of the Weston A. Price Foundation 2004-2009. (800) 475-3663 or go to www.goldminenaturalfoods.com. 12/1

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AK

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PERSONALS

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WORK/INVESTMENT

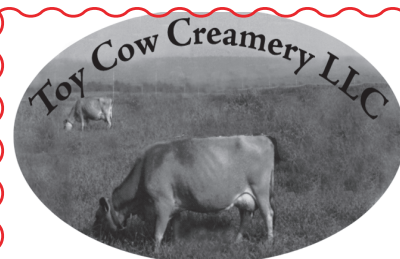
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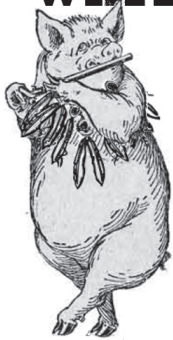
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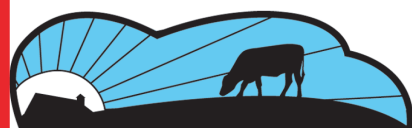
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TO THE
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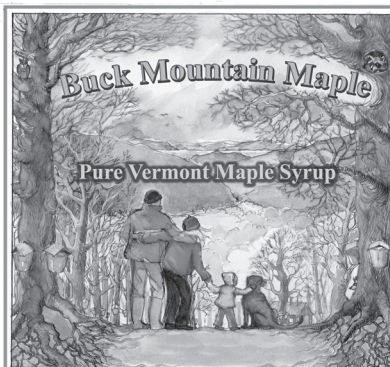
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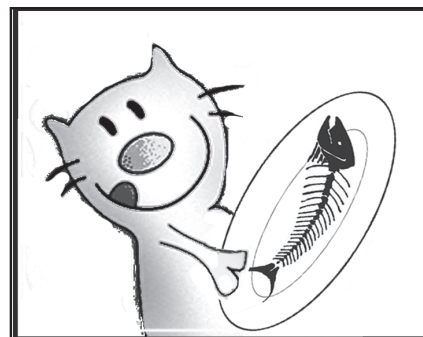
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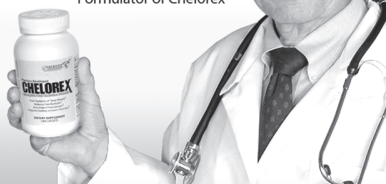
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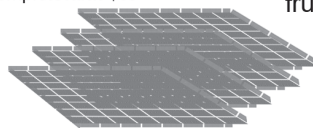
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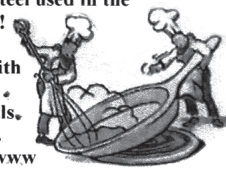
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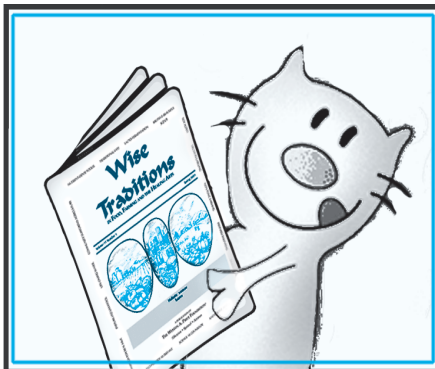
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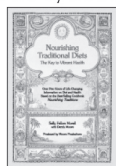
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Fish That We Eat *Iqaluich Niginaqtuat*

This manual by Anore Paniyauraq Jones is the second in a series of three detailing the traditional foods of the Inupiat. The first book in this series about Inupiat foods was *Nauriat Niginaqtuat, Plants That We Eat*, an ethno-botanical manual, long out of print but due to be re-printed in the fall of 2009 by University of Alaska Press. It is 150 pages with black and white photos and sketches.

The second manual, *Iqaluich Niginaqtuat, Fish That We Eat*, provides information regarding the traditional use of fish, their processing, recipes and eating enjoyment. It was compiled from the local traditional fish knowledge of northwest Alaska and was partially funded and placed on the web by the U.S. Fish and Wildlife Service.

The third manual in this series will similarly detail the traditional Inupiat processing techniques and recipes for sea mammals.

Presently there is no funding to support this work. Any suggestions would be welcome. The web link to *Iqaluich Niginaqtuat, Fish That We Eat*, is below. The report is located under the U.S.F.W. Northwest AK section. From here you can read it and/or download and print it. It should be printed double-sided due to the length (341 pages), including 100+color photos, sketches.

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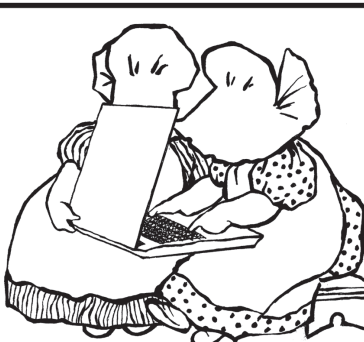
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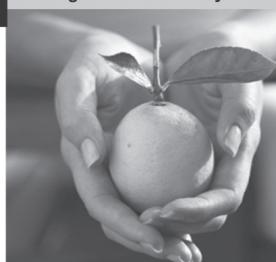
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