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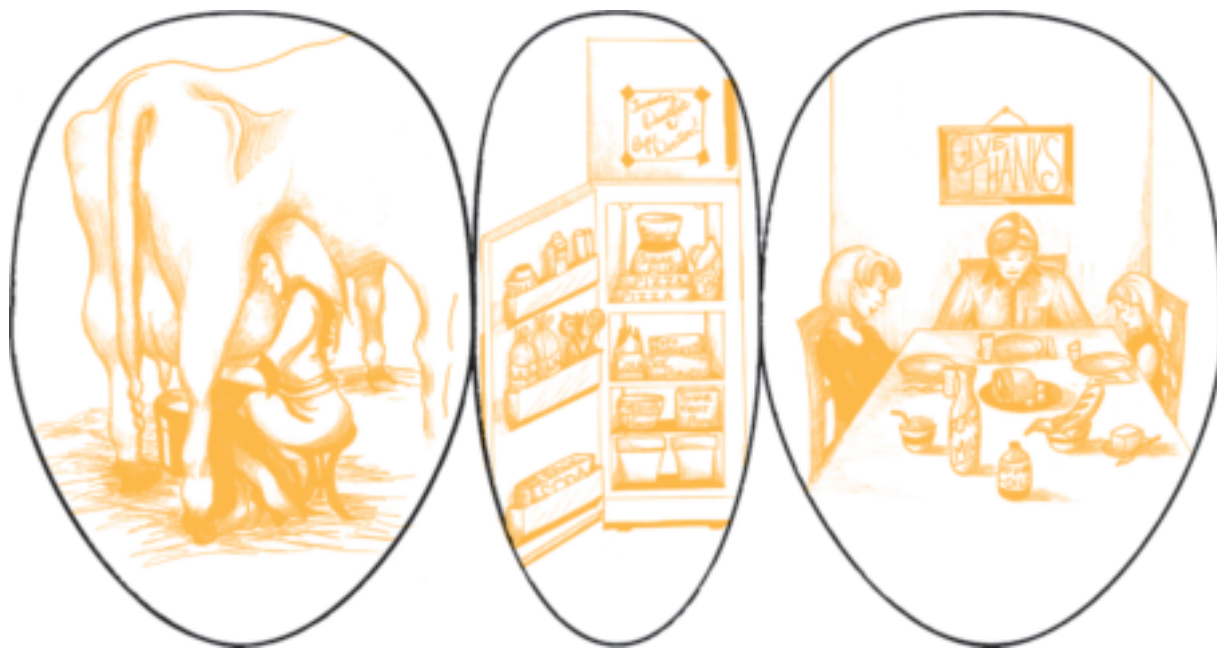
NURTURING THERAPIES

Wise Traditions

IN FOOD, FARMING AND THE HEALING ARTS

Volume 9 Number 2

Summer 2008



The History of Mercury in Medicine
Metal Toxicity: Dangers and Solutions **Agave and Xylitol**
Agribusiness and the Fall of Rome **Backyard Chickens**
Treating Low Blood Pressure **Success with Grass-fed Beef**

A PUBLICATION OF
THE WESTON A. PRICE FOUNDATION®

Education ♦ Research ♦ Activism

TECHNOLOGY AS SERVANT

SCIENCE AS COUNSELOR

KNOWLEDGE AS GUIDE

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THE WESTON A. PRICE FOUNDATION®


Education ♦ Research ♦ Activism

The Weston A. Price Foundation is a nonprofit, tax-exempt charity founded in 1999 to disseminate the research of nutrition pioneer Weston A. Price, DDS, whose studies of isolated nonindustrialized peoples established the parameters of human health and determined the optimum characteristics of human diets. Dr. Price's research demonstrated that men and women achieve perfect physical form and perfect health, generation after generation, only when they consume nutrient-dense whole foods and the vital fat-soluble activators found exclusively in animal fats.

The Foundation is dedicated to restoring nutrient-dense foods to the American diet through education, research and activism and supports a number of movements that contribute to this objective, including accurate nutrition instruction, organic and biodynamic farming, pasture-feeding of livestock, community supported farms, honest and informative labeling, prepared parenting and nurturing therapies. Specific goals include establishment of universal access to clean, certified raw milk and a ban on the use of soy-based infant formula.

The Foundation seeks to establish a laboratory to test nutrient content of foods, particularly butter produced under various conditions; to conduct research into the "X" Factor, discovered by Dr. Price; and to determine the effects of traditional preparation methods on nutrient content and availability in whole foods.

The board and membership of the Weston A. Price Foundation stand united in the belief that modern technology should be harnessed as a servant to the wise and nurturing traditions of our ancestors rather than used as a force destructive to the environment and human health; and that science and knowledge can validate those traditions.

The Weston A. Price Foundation is supported by membership dues and private donations and receives no funding from the meat or dairy industries. 

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President's Message

In this issue, we focus on the past, specifically on the use of mercury in the practice of “heroic” medicine, that is, medicine predicated on the assumption that only aggressive and toxic methods can heal disease. Even though it was obvious to many observers for hundreds of years that strong mercury-based medicines like calomel did not alleviate suffering, and in fact caused long-term harm, physicians continued to prescribe “heroic” doses of calomel well into the 1920s.

Physicians no longer use calomel, but the paradigm of “heroic” medicine is still with us in the form of radiation and chemotherapy for cancer patients (doctors go aggressively after tumors and hope the patient manages to live), multiple vaccinations for children and antibiotics for almost everything (on the conviction that the only good germ is a dead germ). But perhaps the greatest evil of modern medicine is the aggressive campaign against cholesterol, in which the entire adult population, and even many young people, are targets for cholesterol-lowering drugs and everyone, including growing children, is subject to “heroic” lowfat diets to save them from the evils of high cholesterol. Even though the adverse effects of cholesterol-lowering measures are obvious to anyone who cares to look and who possesses an ounce of common sense—growth problems and learning disorders in children to depression, nervous disorders, weakness and infertility in adults—doctors continue to push cholesterol levels as low as they can go, the patient be damned. Cholesterol-lowering statin drugs will eventually go the way of calomel, but if history is any guide, it will take many years for them to disappear completely.

Many natural and nontoxic schools of medicine emerged as a reaction to heroic medicine, including homeopathy; so, too, the Weston A. Price Foundation was founded as a reaction to the lowfat and anti-cholesterol agenda. Our philosophy is based on the assumption of a cooperative and sustaining natural world, one that supports the fullness of life for those who live within her laws, rather than the hostile environment of heroic medicine, one that must be distrusted, guarded against, fought against, outsmarted, poisoned, suppressed and overcome.

The generation of children now growing up on a nourishing traditional diet will be the generation that ushers the Weston A. Price philosophy into the main stream. Nothing gives me more hope for the future than our ongoing Healthy Baby Gallery (see page 97). Thanks to their pioneering parents, who are wise enough to recognize the sustaining principles of the natural world and the fallacies of modern materialistic scientism, these children will possess the strength, intelligence and will to sweep away the last vestiges of “heroic” medicine—radiation, chemotherapy, vaccinations, antibiotics, lowfat diets and statin drugs—and replace them with therapies based on nutrient-dense food. 



Letters



AMAZING RECOVERY

My son Gregory had his first episode of mental illness about eight years ago. Soon after, he was diagnosed with bipolar disorder, followed by schizophrenia, then schizoaffective disorder, then back to the diagnoses of bipolar. He was repeatedly hospitalized in mental health facilities and treated with a variety of antipsychotic, antidepressant and mood-stabilizing drugs, almost as if he were a guinea pig in a research lab. None of the medications facilitated any type of long-term healing. They temporarily stabilized his behavior, but the slightest disturbance would instigate another episode until the medications became the actual disturbance, causing a whole new breed of violent psychotic behavior that we had never seen before. He became progressively worse over a period of about four years and the drugs were undoubtedly the cause.

Another problem that came about was Gregory's reluctance to take the medications. The side effects were so unpleasant and debilitating, he would hide the pills and dispose of them at any given chance. This caused major withdrawal symptoms that became worse than the original condition being treated. The withdrawal symptoms of the antipsychotic drugs began to induce

the most psychotic behavior yet, the onset of voices. Once this began, nothing could stop the torment that took place within my poor son's own mind. As a mother, unable to help her child, I began living the most frightening nightmare imaginable.

From January 2001, we spent a great deal of time in and out of hospitals, with different psychiatrists, psychologists and social workers, trying different medications, diets and supplements, and nothing seemed to work. I was beginning to feel an overwhelming sense of hopelessness. Nothing had made sense to me until I opened the 2007 issue of *Wise Traditions* and read an article about the connection between zinc and copper in relation to mental illness. For the first time in years, something had finally made sense. I immediately picked up the phone and called Theresa Vernon, whose name had been mentioned in the article. After explaining the situation with my son, she then shared with me a similar experience she had had with her son. Then I really began to listen. She explained to me what the hair tissue analysis would actually reveal.

Results from Gregory's hair analysis revealed that he had accumulated toxic levels of heavy metals, including aluminum, mercury and copper. He had

severe mineral imbalances, along with serious thyroid and adrenal malfunction. First, Theresa addressed his thyroid and adrenal problems by providing supportive vitamins and minerals. After he gained some strength back and began to feel better, she prescribed a detox program that balanced out his mineral levels while eliminating heavy metals. He experienced many ups and downs during the elimination process. This was a very trying period for all of us. Through further analysis, it was also found that Greg had celiac disease, severe lactose intolerance and several other food allergies. Theresa addressed all of these issues and gave us the curative recommendations. He now follows a strict diet of traditional foods, takes a specific regimen of supplements, and leads a healthy, peaceful lifestyle. He has regained his confidence and is beginning to function normally in society, working part-time, socializing with friends and family, and has intentions of finishing college.

Theresa Vernon is an extremely knowledgeable, professional, and compassionate person. Her meticulous approach and adept wisdom truly saved my son. She has made such a significant improvement in the quality of my son's life and I know that she can do the same

THE POETRY AND VISION OF WESTON A. PRICE

"We can now visualize our universe, its light, gravity and heat, its seasons, tides and harvests, which prepare a habitation for the universe of vital forms, microscopic and majestic, which fill the oceans and the forests. We have a common denominator for universes within and around each other, our world, our food and our life have potentials so vast that we can only observe directions, not goals. We sense human achievements or ignominious race self-destruction. Every creed today vaguely seeks a utopia; all have visualized a common controlling force or deity as the most potent force in all human affairs. Yes, man's place is most exalted when he obeys Mother Nature's laws."



Letters



for many other people that suffer from similar problems. There is hope for people with mental illness, please do not give up, call Theresa Vernon (805) 649-8891.

Kasha Neam
Falls Church, Virginia

Theresa Vernon will be a speaker at Wise Traditions 2008. As a resource, Kasha and Theresa recommend The Strands of Health: A Guide to Understanding Hair Tissue Mineral Analysis by Rick Malter PhD.

OUT OF PLACE?

Matthew Rales' article "An Inconvenient Cow," (Spring 2008) was wonderful. He "hit the nail on the head." Grass-based agriculture would solve so many problems. It would fuel a switch from fossil fuel to solar-powered food systems, repopulation of rural areas, restoration of peoples' health and the best, fastest way to sequester carbon.

The sidebar article on global warming seemed glaringly out of place. The main article was rightfully critical of our corporatized, industrialized food system. Yet this side article was supportive of corporatized, industrial inspired global warming detractors. The website referred to had articles from relatively few "scientists" citing only a few data inconsistencies, a common detractor strategy. Some articles on the site were almost derogatory in their criticism of "environmentalists" and the "greenhouse industry." One article was strongly critical of wind turbines. A thesis was that this greenhouse industry is deceiving us to continue to receive

research mega bucks. Even if global warming is a myth, the environmental, social and even economic benefits of change are enormous. Consequences of doing nothing could be catastrophic.

Bill Rosin
Selby, South Dakota

We should not base our opinions on whether a particular point of view is deemed supportive of either corporate or environmentalist agendas, on how many scientists support the view (so-called consensus science) or whether scientists who question global warming promote the use of wind turbines, but on the totality of the evidence available. Evidence taken from around the globe indicates that the earth goes through cycles of warming and cooling, facts that proponents of global warming fail to mention. The "hockey stick" graph used to justify draconian worldwide government controls was constructed using highly selective and improperly manipulated data. We should be wary of fearful scenarios that call for solutions involving massive government bureaucracies—the consequences of doing something could be disastrous! And for the record, your editor does not support wind turbines as a solution to our energy problem. They are not economically viable without government subsidies and are made from aluminum, the production of which is highly energy intensive and polluting. Furthermore, they contribute to visual pollution; in fact they ruin the landscape.

PARTNERSHIP

The government assault on raw milk brings to mind the assault on insects with pesticides and the assault on human disease with pharmaceuticals. Both "remedies" are increasing in volume and cost while the pest-insects and our illness problems increase year by year, not to mention the cost of both.

Ever since the government started interfering with the natural flow of agriculture and medical care, things have eroded to a point where we cannot afford pesticides, pharmaceuticals. . . or the government. It is time we get back to nature to solve our problems. To quote François Rabelais, this is "science without conscience," compounded chaos.

I'm doing my utmost to promote the things you're doing at the Weston A. Price Foundation, such as championing raw milk and defending the independent farmer. I often share your news releases on my radio program, "Return to Eden." In addition, my website truthsimply.com is the source of commentaries about issues that matter.

I consider it my duty to do my part to help turn this country around. It is my pleasure to partner with the Foundation toward that end.

Ed De Boer
Bakersfield, California

RAW MILK IN ALASKA

My wife and I operate Alaska's only "legal" farmstead goat cheese-making business. I just wanted to write a note thanking you for your help and support for the legalization of raw milk sales in our state.

Ours is a state that really doesn't

Letters

have much clout or get much attention nationally (unless you're talking about oil!), especially with respect to agriculture. My aspiration to make 100 percent of my living from the farm here in Alaska has been scoffed at. Local farmers tell me I'm crazy. However, we have ignored these remarks and plowed on, determined to make it work.

The work you are doing is so much more important than just "I want to sell milk." It is a most basic of freedoms, the foundation of all our other freedoms, to be able to feed ourselves and our families according to our own convictions. If we are not allowed to do this are there any other freedoms that really matter? Thank you, your whole staff and the Legal Defense Fund again so much!

Matt Shaul
Cranberry Ridge Farm, Alaska

Unfortunately, the Alaska bill to legalize raw milk sales was defeated this year; but Alaskan raw milk activists can always try again next year.

BOILED IN OIL

As you have reported, recently the Ontario government called for a ban on *trans* fats. At the same time, however, McDonald's has initiated a changeover of its french fry shortening from beef

tallow (used to blanch the fries) to a *trans*-free concoction of three polyunsaturated oils. This will now bring them

change out the oil until the french fries are brown and taste like, well, rancid french fries.



in line with US practices.

McDonald's and its competitors clean the oil each night by passing it through a large paper filter dusted with baking soda to eliminate the rancid flavor. Newer, deep fryers are now self cleaning with a built-in lower drawer. The oil is kept in the unit for at least three days and is topped up regularly.

Most, if not all, of the McDonald's owners are millionaires and, believe it or not, they are personally very health conscious, many being fitness buffs. Few eat their own food.

I am more afraid of the small family stores—I know because I grew up in the restaurant business—which *never*

About a year ago I was visiting the Toronto Eaton Center in New York. On average 750,000 people visit this mall every day. In the south end is a fast food area with a New York Fries outlet. Out of curiosity I approached a fellow who looked like the store owner working in this NYF, and he was quick to tell me that the "light flavor" of their fries was from a change to sunflower oil only. When I asked him if he changed the oil out each day, he looked at me in shock and said that I must be crazy as they only change out the oil every four days!

Has anyone ever figured out the quantity of free radicals boiling away in the bottom of those fryers? Having been to hundreds of grand openings at McDonald's, I can attest to the fact that their McNuggets and fries are absolutely fabulous when they make the first batch in the fryers. After that, they never taste the same even when they change out the oil. If I do have a hankering for such foods, I now ask them which day they last changed out the oil. Considering they do \$3000 an hour in sales, that's a lot of boiled oil! I would never visit such a place on a Sunday evening.

One would think that with the millions of dollars invested in hopeless food items like McRib and Pizza's (here in Canada), they would be the first to



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implement a new method of cooking french fries. Perhaps some sort of hot oil spray that is used once, then flash cooked, just like fast freezing. They certainly have the resources to do such a thing.

John Goldmaker
Mississauga, Canada

Of course, the real solution is to go back to using stable tallow.

DOCTOR MYSTIFIED

I had a bone density scan over two years ago and was told I had full blown osteoporosis. I take three grains of Armour thyroid every day (3/4 grain every six hours) and my endocrinologist is constantly worried that this will make my osteoporosis worse.

A new scan was done recently, same machine, same doctor, but different results. My improvement has been so dramatic that I sit on the borderline between osteopenia and normal. I have refused all the drugs my doctor has wanted me to take (Fosamax, Evista, Boniva), and although I have the best of intentions, my strength training is mostly done in my dreams.

Diet is the key to my improvement; most notably raw milk, raw butter, and no commercial vegetable oils. I became committed to a WAPF diet almost five years ago after breaking my pelvis and arm. Normally it takes years for improvements to show, especially if one is recovering from a major injury. My doctor is Indian which allows him to “accept” the fact that I drink raw milk, but his American medical training has taught him that a recovery without drugs

is impossible. So we remain at loggerheads as I continue to improve and he chooses to remain mystified as to how.

Kathy Gibb
Oklahoma City, Oklahoma

ANOTHER OSTEOPOROSIS CURE

My mom, now 72, was diagnosed with osteoporosis in her late 30s, early 40s. She was a heavy milk drinker (pasteurized) and heavy smoker. She suffered from back problems for years and in 2003 had to have surgery at the Cleveland Clinic for compression fractures in her lower lumbar spine. She was told by local doctors and the Cleveland Clinic doctors that she should prepare to be in a wheelchair.

She saw a rheumatologist at Cleveland Clinic a few times in 2004, but when he said the over-the-counter calcium supplements were the best source of calcium for women, we lost all respect for him. He tried to get Mom on all the various drugs, such as Fosamax and Evista, but she had already tried them and experienced side effects, so she refused to try them again.

The only change she made back in 2003 was I got her on raw milk and cod liver oil, and she has never had another fracture. She had stopped taking cod liver oil last March when she had heart surgery, and she was recently told by her doctor that she has “polymyalgia” because her SED rate was 126 and needed to be on prednisone immediately. We said “no” and I got her on the fermented cod liver oil. The doctor is scratching his head because her SED rate is now 53 without prednisone! Diet and cod liver

oil have given my Mom a new lease on life. Even the severe depression she’s had most of her life is now gone.

Elise Deitz
Clarion, Pennsylvania

RAW MILK IN SWEDEN

Thank you for all your work on traditional diets. It has made a huge impact on how I and my family view food, cooking and nutrition. I am a scientist and like the fact that everything on your websites is so well referenced, but perhaps even more important is that everything makes so much more common sense than the rubbish propaganda governments try to push on us.

It is possible to obtain raw milk in Sweden, as it is legal to buy direct from the farm. We buy our milk from a nearby farmer who produces organic milk. Unfortunately, Sweden is rather cold in the winter, so the cows are indoors several months in a row (they do get exercise once a week), and are fed grains along with hay (I think some of the hay is fermented). I think that they are grazing outdoors for at least six months though, so we are satisfied. The milk tastes great and has done wonders for my eldest as she completely stopped having ear infections and runny nose as soon as we made the transition to raw milk. We also make our own whole milk butter milk (filmjolk), but we are a bit too lazy to separate the cream.

Martin Andersson
Ostervang, Sweden



Letters



A BEEF

In your article “It’s the Beef” on your website you state: “The most likely causes of increased heart disease in America are the other changes in our diets—huge increases in consumption of refined carbohydrates and vegetable oils, particularly hydrogenated vegetable oils; and the decline in nutrient levels in our food, particularly minerals and fat soluble vitamins—vitamins found only in animal fats.”

Let me share my “beef” with you: The beef industry, like any industry with a product to sell, conducts customer surveys as a marketing strategy to enhance its product sales. One of the questions customers are asked is: What color fat do you prefer your beef to have? Given the choice of yellow fat or white fat, the consumer has a preference for white fat, and the whiter the better. Cattle raised on pasture consume green grasses which, because of their high carotenoid levels, turn their fat yellow. Beta-carotene is the major component responsible for fat color in cattle. Beta-carotene is only a minor component of total carotenoids in grass (about 5 to 8 percent) but is selectively absorbed making up 80 percent of the yellow pigments in beef fat.

To satisfy the consumer, the last several months of a cow’s life are spent in a feedlot eating a grain-based (low-carotenoid) diet. The fat loses up to 90 percent of its beta-carotene and its color turns white. (It also loses two-thirds of its vitamin E content, two-thirds of its omega-3 content and two-thirds of its CLA content.)

However, the cattle are fed vitamin E because it is known to promote

shelf life by preventing lipid peroxidation.

In Canada, beef with yellow fat cannot be graded as Canada Prime AAA, AA, or A. Carcasses with yellow fat are graded as B and cannot be marketed in Canada. In the Japanese market, the fat must have a satin-like appearance for Japanese consumers who have a strong aversion to yellow fat, the healthiest kind!

It really speaks to the need for grass-fed beef with good nutrient-rich yellow fat in our diet, not the industrialized white version. The beef we are eating is devoid of many nutrients and may be contributing to our chronic diseases since it is not what nature intended us to eat.

Dr. Paul Chris, OD
Toronto, Canada

It would be interesting to see whether there is a large difference in vitamin A in yellow compared to white fat. Omega-3 content does not change appreciably (it is low in both pasture-fed and grain-fed beef), but grain-fed beef contains more monounsaturated fatty acids. It is unlikely that grain finishing of beef is the chief cause of our health crisis today. Grain finishing is not a new practice and humans never got appreciable amounts of vitamin A from beef fat. To the great increases in the consumption of vegetable oils, refined carbohydrates and processed foods we should probably add a decline in the consumption of organ meats as a contributor to our current health crisis.

EFFECTIVE TEACHINGS

I am a 21-year-old college student at Florida State University who can testify, after only a few months, to the effectiveness of your teachings. I was born a healthy weight, breast fed for years, but then raised on pasteurized milk and cold cereal, never knowing anything that is advocated on your website. The soup I ate was MSG-packed Campbell’s products, and the cereals all had huge amounts of sugar

When I was diagnosed with ADD at a young age I was put on various drugs. The medications made me feel like a zombie, and I did not feel like a child should at that age. I required braces at a young age and had to have six teeth pulled in total.

For the past year, I have had a pretty obvious case of gingivitis; my gums looked puffy around the edges and bled during flossing quite easily. This has subsided in the past few days. The only change I can account for is diet. I discovered Dr. Mercola and his material a few months ago, and through him your organization. I had given up all dairy except cheese on pizza and occasional indulgences because the allergic reactions were becoming too much to bear. My replacement was non-GMO soy milk.

A chiropractor who fixed a vertebral misalignment in my top two vertebrae about 10 months ago told me I must have an exceptionally strong constitution to not have fallen under the myriad number of symptoms that come with upper cervical misalignment, which causes the cervical spine to push against the brain stem, resulting in de-



Letters



pression (which I battled my whole life) and other strange symptoms, ranging from weak immune systems to physiological short leg, which I had, until the moment he gently, with no popping or cracking, nudged my cervical vertebrae into proper alignment. I am sure that the year or two I spent drinking soy did not produce the weakness or the other symptoms I have read about from soy because of the strength of my constitution.

The point is, my gingivitis is gone, and I have to think that, aside from properly preparing nuts, seeds and grains and making homemade broth from pasture-fed chickens, the raw milk is why. I drink about one quart per day on average, of course with no reactions other than energy and lack of any sort of ADD symptoms as my friends and family will testify.

David Bonilla
Tallahassee, Florida

EAR CANDLING

I am a new member of the Weston A. Price Foundation and was excited to receive my first copy of *Wise Traditions*, Winter 2007 edition. However, I was disappointed to find some misinformation in the article, "Traditional Remedies for Childhood Illness" by Sarah Pope.

I am always in support of not rushing our children to the pediatrician's office at the slightest sign of discomfort, but I cannot agree with her summation of ear candling. She states, "Ear candles don't really clean out your ear—that is misinformation—but they blow warm smoke into your ear that helps dry out any moisture that may be in there."

In my experience with the blessed candles, when they are used properly, they absolutely clean out any excess wax that may be causing you problems. When you create a vacuum with the candle, as is intended, by making sure that smoke is not entering your ear, you will truly clean out any excess wax. If you had any to remove in the first place, the evidence is left at the bottom of the candle and can be inspected upon unrolling it—the wax that accumulates there is the proof. I suggest that the first time you do this, have it done by someone who knows what they are doing, because if you are holding the candle at the wrong angle, it will be more difficult to obtain said vacuum.

Alexis Morini
Balsam Grove, North Carolina

REBOUNDING HEALTH

Since taking my son Brodie off soy milk and soy products he has been rebounding from health and behavior problems. He had complained of his head spinning, fatigue, inability to think, and more difficulties related to concentration and performance at school. And since quitting soy products the circles have disappeared from under his eyes. His attitude is much more positive and patient, he can mentally function while learning reading skills and his writing skills have improved.

Brodie had been exhibiting most of the signs of ADD/ADHD. When he could not concentrate and succeed, he would become frustrated, fidget and misbehave.

Both my boys had been taking soy formula and/or soy milk since one year

of age. I thought I was giving them the perfect food. We as consumers are being terribly misinformed with these feverishly advertised claims for soy when it is truly a chemical cocktail slowly poisoning us instead.

Carlie Ferland
Whitehorse, Canada

RAW MILK CHALLENGE

I too get a little caustic at times with the anti-raw milk folks. What I would offer them is a challenge to prove a food safety point. I would gladly consume a quart or more of raw milk of my choice, after three or four days without refrigeration, while they do the same with their choice of pasteurized/homogenized milk. I'd gladly repeat the experiment, side by side, as many times as my pasteurized/homogenized competitors would like to take part.

I would assume no takers, just highly paid talkers. My family is healthier because of you and the Foundation—thanks from all of us!

Bill Neu
Lyons, Wisconsin

SUNLIGHT AND MELANOMA

The article entitled "Sunlight and Melanoma: The Surprising Connection" on your website is in error. Upon examining the publications in the *Journal of the National Cancer Institute* to which the article refers as well as the published comments regarding the articles, it is premature and irresponsible to conclude that one should increase one's exposure to the sun in order to increase the chance of surviving melanoma. Please see the comment by Kalish (2005) in *JNCI*. I



Letters



urge you to either remove this article from your website or include Prof. Kalish's comment in order to better represent the evidence linking sun exposure and melanoma.

Crystal Edler, M.A.
Iowa City, Iowa

While these studies are provocative and intriguing, we should, as you point out, be careful before we jump to the conclusion that the more sun to which we are exposed, the better. The first study, finding an increased survival among melanoma patients with solar elastosis, a sign of chronic sun exposure, compared to melanoma patients without solar elastosis, has multiple interpretations. It is known that there are cellular pathways to the development of melanoma, and it may be that excessive sun exposure causes a less aggressive type, while the more aggressive type has different causes. However, the second study is more convincing, because the total incidence of lymphoma was lower among people with increased sun exposure. Nevertheless, the mechanism is unclear; a connection to vitamin D is speculative, and we must always remember that correlation does not prove causation. The possibility that vitamin D may protect against a variety of cancers has gathered a great deal of evidence, but vitamin D can be obtained both from sunshine and from diet, and it is not necessary to tan or even turn pink in order to maximize one's vitamin D production for any given day. Among the populations studied by Dr. Price, some groups received considerable exposure to sunlight while others almost always covered their skin with clothing. And

Price cites a group that sunbathed with coconut oil on their skin, which they thought had nutritional value. But all of these cultures also obtained vitamin D from foods like oily fish, fish livers, fish eggs and butterfat and organ meats from grassfed animals. Thus, we should make sure to obtain plenty of vitamin D from diet and sunshine, but we should still protect ourselves from sunburning or excessive tanning.

NEW STANDARD

This morning I received a set of laboratory values for my patients from Quest Diagnostics Incorporated. The laboratory's new reference range for total cholesterol is 125-170 mg/dL. Virtually all of my patients now meet criteria for statin medications.

As your readers know, low cholesterol is associated with anti-social and violent behavior. From this I suspect the new cholesterol norms will keep psychiatrists in business.

Ann Childers, MD
Oregon City, Oregon

We published a chart in the Summer, 2007 issue, page 7, showing that formerly cholesterol levels up to 300 mg/dL were considered normal.

THE MARSHALL PROTOCOL

It was stated in the commentary, "More News about Vitamin D," (Spring, 2008), that the work of the Autoimmunity Research Foundation (ARF), a California non-profit, was part of the pharmaceutical industry's strategy to counter evidence on the benefits of vitamin D. On the contrary, the ARF receives

no support from drug companies and is run entirely by volunteers, with no paid staff at all. People who volunteer for the ARF are motivated by their own improved health using the approach developed by the ARF, or the potential they see in the Foundation's work for helping themselves, family members and the wider community. I am one of these volunteers, not the Executive Director, as the Commentary mistakenly mentions.

The work of the ARF arises from the discoveries of its founder and director, Professor Trevor Marshall, PhD, building on decades of research on the role of bacteria in chronic inflammatory diseases. Dr. Marshall has developed an approach that restores functioning of the vitamin D receptor, which he has found to be compromised by intracellular and biofilm bacteria that block the receptor (www.medicalnewstoday.com/articles/94642.php) in order to evade the immune system. Blockage of the receptor by the bacteria leads to dysregulation of vitamin D levels, which can be mistakenly interpreted as a vitamin D deficiency and lead to the many studies showing a correlation between disease states and low vitamin D levels.

In what may seem paradoxical at first, Dr. Marshall has found that reversing the disease process and eventually regaining health typically requires an avoidance of supplemental vitamin D as part of the overall anti-bacterial approach. This is because supplementation can often contribute to the blockage of the vitamin D receptor by raising levels of the precursor form, 25-D, into a range that can add to receptor blockage.



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Receptor blockage leads to poor innate immune system function and overgrowth of bacteria and other pathogens. High vitamin D levels can also act like a steroidal immunosuppressant and cause short-term symptom reduction at the cost of long-term bacterial increase.

I would also like to respond to points made in the commentary related to the interpretation of a study by Payne and others, showing a correlation between higher vitamin D intake in older adults and higher brain lesion volume (www.fasebj.org/cgi/content/meeting_abstract/21/6/A1072). It was assumed in the commentary that any correlation with brain lesions must be due to the use of vitamin D₂ instead of vitamin D₃. The

brain lesion study used data from patient questionnaires on intake of vitamin D from all sources, both supplemental and dietary and did not administer pharmaceutical vitamin D (which is usually in the D₂ form). Since this was a recent study and the vitamin D used in most commonly used OTC supplements, and the vitamin D added to milk is D₃, it seems unlikely that any negative effect was due to the supplemental component of the vitamin D intake being from the D₂ form. Also, I should note that the highest vitamin D intake in the study was below 1100 IU and many of the people getting the higher levels of vitamin D would have been getting them from multi-vitamin supplements, dairy products with

added vitamin D and A, fish and fish oil and thus would have been getting some vitamin A from those sources. We have not found any difference between patients consuming vitamin D₃ versus those consuming vitamin D₂ prior to beginning the ARF's approach (also called the Marshall Protocol). In any case, the brain lesion study is only a small part of the case to be made supporting the validity of the Marshall Protocol (www.AutoimmunityResearch.org <http://members.aol.com/SynergyHN/shpt> and <http://bacteriality.com/category/brain-lesions/>, <http://members.aol.com/SynergyHN/MPIntro>).

I am not by any means a supporter of pharmaceutical use unless truly neces-

ORGANIC MATTRESSES

I applaud *Wise Traditions* for its efforts in getting people to question the status quo, and leading its readers back to the traditions of nature. I have been an environmental consultant for 18 years, often working with chemically sensitive people. I have tried hard to get my clients to turn from the synthetic materials that have sometimes harmed them and trust in the natural materials that can sustain both the earth and their own lifestyles. I currently produce a line of organic and natural mattresses. It is with some dismay then that I read Dr. Masood Kureshi's letter about a mattress company's web site, www.peopleforcleanerbeds.org, which asserts, boldly and incorrectly, that the only way for buyers to get a truly chemical-free bed is to skirt existing fire safety laws through a doctor's prescription. The company further asserts that wool is not and cannot be effectively used in mattresses without chemical fire retardant treatment. Dr. Kureshi's letter even implies that you may risk your own health by sleeping on an organic mattress because it has to have chemical fire retardants in it. This is simply wrong. Fear may sell but it makes a poor foundation for the truth.

The self-serving nature of his letter would have been apparent had Dr. Kureshi been properly identified. He distributes a line of synthetic visco-elastic mattresses, manufactured by the company that sponsors the very web site to which he steers people. I would hate to see your readers, already struggling like the rest of us with rampant corporate green-washing, fall prey to further misleading or inaccurate information. While it is true that it is not possible for a synthetic mattress to pass fire safety regulations without fire retardant chemicals, it is indeed possible (though admittedly challenging) to build a quality organic mattress that will do so. My company's mattresses have passed, and continue to pass, all federal and state fire safety regulations without the use of any chemical fire retardants or synthetic fire barriers. It's not surprising to find some mattress companies giving up on the idea of building a chemical-free organic or natural mattress altogether or opting for other, synthetic methods, but the site's statements: "There are no natural, chemical-free, or nontoxic systems that pass the severe open flame test," and, "As of July 1, 2007 all mattresses nationwide, including crib, must...contain toxic chemicals," are patently provocative, inflammatory and incorrect.



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sary and see our goal as to eliminate the pathogens and consume a healthful diet, so as to not need pharmaceutical intervention. I think the Marshall Protocol has more in common with the Weston A. Price Foundation's mission than might first appear. Dietary changes, including an increase in sugar and refined grains is, in our view, just one of the changes in cultural practices that have led to an increase in chronic disease. A number of the recent changes that have occurred have also led to an increase in intracellular bacteria that block the vitamin D receptor and thus there is a need for an approach that reverses the current trend. Recent findings indicate that we may not only be able to accomplish

recovery from diseases such as autoimmune diseases and fibromyalgia, but even potentially eliminate inflammatory diseases of aging, such as heart disease, osteoarthritis and even cancer.

Joyce Waterhouse, PhD
members.aol.com/SynergyHN

Thank you for your letter of correction. Regarding the study on brain lesions, this study was cross-sectional and not longitudinal, and cross-sectional studies are less capable of discerning cause and effect than prospective longitudinal studies because there is no evidence that the vitamin D supplementation preceded the development of the brain

lesions. Furthermore, the study did not measure vitamin A. Vitamin A intakes were probably low for the simple fact that physicians now warn seniors against excessive vitamin A intake. For example, a recent review states that physicians should explicitly warn their patients against exceeding the RDA for vitamin A even though the tolerable upper intake limit set by other bodies is four times greater than the RDA. (Jackson HA, Sheehan AH. Effect of vitamin A on fracture risk. Ann Pharmacother. 2005;39(12):2086-90). There is no evidence from the abstract that the patients who were supplementing with vitamin D were getting any more vitamin A than those who weren't. It would

The site referred to is correct in stating that no natural material, including wool—used by itself as a fire barrier—could ever withstand a federal open flame test without fire retardant chemicals added. This is the point made by the web site's video, "Wool Burns," which shows an untreated skein of wool going up in flames. But untreated organic/sustainably grown wool is not used by itself as a fire barrier in my mattresses, nor in a few other properly built organic mattresses made by other manufacturers. This fact exposes the web site's "Wool Burns" video as dramatic but ultimately as meaningless as it is misleading. When used properly and constructed skillfully with other correct, natural, untreated materials in a quality organic mattress, the wool in combination with these other materials does, in point of fact, pass and continues to pass all federal and state open flame tests. Furthermore, I have my wool tested through an independent lab in Germany, and the wool is free of all harmful chemicals, including organophosphate flame-retardants of all types, antimony and boric acid.

Thus there is no need to go through a doctor's prescription to get a mattress without fire retardants and wind up sleeping in a natural bed that has not passed federal safety laws; or on a synthetic mattress that may include other potentially toxic petroleum-based materials as part of its very construction! I find it odd that any consumer concerned with the dangers of chemicals would desire any mattress comprised chiefly of synthetics—with or without toxic chemical fire retardants added to the mix. The only time I ever suggest people use a doctor's prescription to sleep on a mattress that cannot pass fire safety laws is when the person wants an organic and natural mattress but does not want wool. In these cases, the client is informed that the mattress is made only with organic cotton and natural latex or inner springs—no wool—and that it will not pass the open flame test.

Mine is a small, environmentally conscious business, and we go it alone without large corporate sponsorship. We believe in the safety and the quality of the mattresses we make and our business depends upon the trust of our customers. This trust was potentially compromised by Dr. Kureshi's letter, a commercial ad dressed up like a public service announcement. I hope your readers will continue to do what they do best: looking past facile claims and questioning any person or site that purports to possess the ultimate truth.

Mary Cordaro, Valley Village, California

Mary Cordaro will be a speaker at Wise Traditions 2008.



Letters



be interesting to see whether there is any correlation of brain lesions with naturally occurring vitamin D in foods like cod liver oil, shrimp, liverwurst, egg yolks, etc., which also supply vitamin A. Weston Price did not find problems in populations consuming far more than 1100 IU vitamin D per day from natural food sources.

IV FEEDING

Last December, my father-in-law was in the hospital, unable to talk or swallow following a stroke. For a period of time, he was on a tube feeder and I was able to read the ingredients from his food bottle. The ingredients are water, corn syrup, soy protein isolate, soy protein concentrate, canola oil, medium chain triglycerides, potassium citrate, partially hydrolyzed guar gum and then a long list of manufactured vitamins and minerals.

I am so sad to learn that there is no food or nourishment in these bottles. There are people all over the country every day whose only food is this. I hope that by raising awareness of real nutrition, WAPF will lead the way for a better future and the availability of real food to all people—those who are well and the infirm.

Maureen Smuin
Grand Junction, Colorado

MIRACLE BABY

I want to share a story that shows the power of a nourishing, traditional diet during pregnancy. When I got pregnant during the summer of 2006, I had spent the previous few months following the dietary recommendations on the WAPF

website for pre-conception, including plenty of grassfed beef, pastured chicken and eggs, butter, raw milk and cheese, fish eggs, homemade chicken stock, sprouted bread, brown rice, fruits and vegetables, and of course the daily dose of cod liver oil. I planned to have a homebirth with midwives, and one of the focuses of midwifery is the diet of the pregnant mother. Throughout the pregnancy, my midwives were amazed and pleased with my diet that was so outside the norm.

Towards the end of pregnancy, there was some concern because my baby seemed somewhat small and my blood pressure was getting quite high. Nonetheless, my husband and I decided that natural homebirth was still our most prudent course of action.

After a great labor, Alina Kathryn Smith was born at home on March 17, 2007 at full term. She was 18 inches long, but we were all surprised to see how skinny she was, weighing in at just four pounds. The cause of her low weight soon became apparent as the placenta was found to be smaller than normal with large portions that were not properly formed. Alina was so small because nutrient flow through the placenta was severely limited. The placenta was unlike any ever seen by the senior midwife, who has attended over 2,000 births.

My midwives told me that I was able to maintain the pregnancy only because of my exceptional diet, and that such a compromised placenta would generally lead to miscarriage. Although skinny, Alina was born perfectly healthy, and was able to gain weight faster than

any low-weight baby the midwives have ever seen (which is saying a lot considering they have both worked in neonatal wards). With lots of nursing, Alina doubled her birth weight by the time she was eight weeks old. I have continued to follow the WAPF dietary recommendations for nursing mothers, and consequently Alina has continued to thrive.

Why the placenta was malformed remains a mystery. My theory is that it could be related to over ten years of birth control pills prior to pregnancy in combination with the fact that, according to my fertility awareness charts, my hormone levels were still abnormal when Alina was conceived seven months after I stopped taking the pill. Regardless, I literally owe the life of my daughter to the nourishing, traditional diet recommended by WAPF.

Sarah Smith
Las Cruces, New Mexico



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 laymen. 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.

Caustic Commentary

Sally Fallon and Mary Enig take on the Diet Dictocrats

WE ARE NOT MAKING THIS UP

An epidemiologist from Auckland University is calling for a health tax on butter, claiming that the dairy fat is “pure, natural poison. . . as bad as cigarettes.” According to Professor Rod Jackson, butter is “the purest form of saturated fat you can eat and it has no protein and no calcium. Butter has had all the good things taken out and just left the poison.” Jackson’s comments come in advance of a nationwide cholesterol testing program sponsored by the makers of Flora Pro-Activ cholesterol-lowering spread. The program features nurses in shopping malls providing fingerprick tests to determine people’s cholesterol levels (www.stuiff.co.nz/4466728a11.html). It was the late Valerie James, a New Zealander, who discovered that the active sterols in cholesterol-lowering spreads are actually the waste products of the wood pulp industry, which cause sex inversion in fish downstream from the mills (<http://www.westonaprice.org/modernfood/toxinstoast.html>). And what’s to be done with all the beautiful, nutrient-

dense grass-fed New Zealand butter that Kiwis are no longer supposed to eat? According to Jackson, it can be shipped to China—apparently butter is not toxic to the Chinese, with whom New Zealand coincidentally has a new trade agreement—or turned into biofuel!

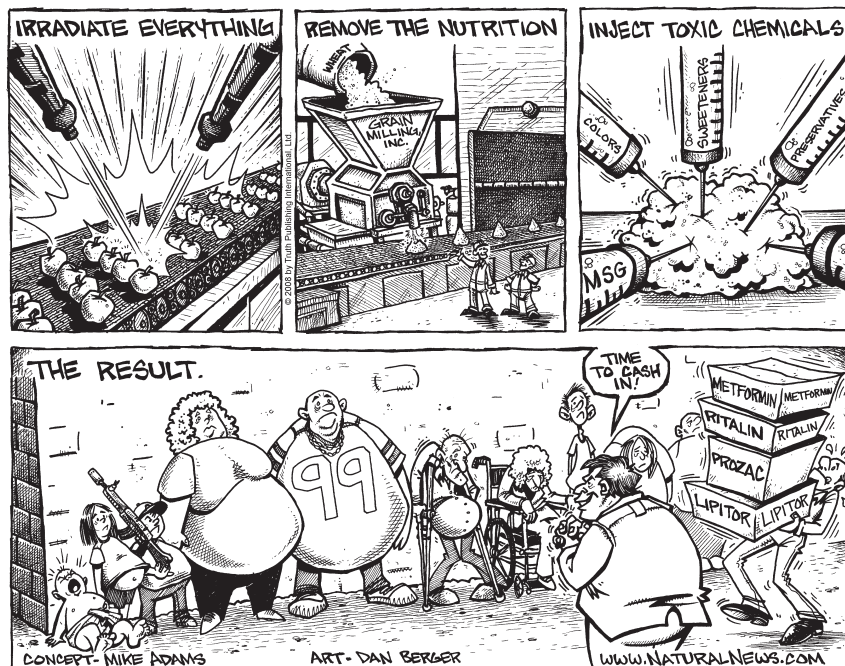
CONCERNS ABOUT COD LIVER OIL

A new study out of Norway found that consumption of cod liver oil during childhood was negatively associated with bone mass density, which researchers blamed on the vitamin

A content of cod liver oil. “Although the vitamin A content of commercial cod liver oil was recently reduced by 75% in Norway, the past high concentration remains a possible explanation for the observed negative association between childhood cod liver oil intake and forearm BMD [body mass density]” (*American Journal of Epidemiology*, 2008 (167(4):406-411). But it is obvious from the description of the cod liver oil used in the study that the problem had to do with the ratio of A to

D in the Norwegian cod liver oil up to 1999, which contained only 40 IU vitamin D for 3,300 IU vitamin A. The vitamin D is mostly removed with modern processing techniques, leaving a product with an A to D ratio of over 80 to 1, when it should be 10 to 1 or less. Of the women currently taking cod liver oil (60 percent of those in the study), there was no negative association with BMD.

COUNTERTHINK - “THE PLAN FOR THE GLOBAL FOOD SUPPLY”



Courtesy Mike Adams and Dan Berger, www.naturalnews.com.

INFORMATION EXCLUDED

Your tax dollars pay for the National Institutes of Health and its National Library of Medicine and hence Medline, the online index of articles published in medical journals. But although Medline indexes material from *Newsweek*, *Consumer Reports*, *Reader's Digest* and *Time* magazine, it refuses to index the *Journal of Orthomolecular Medicine*, even though it is peer-reviewed. The journal *Fluoride* and the *Journal of the American Association of Physicians and Surgeons* (which opposed mandatory vaccinations) are similarly excluded. Articles from

Caustic Commentary

the *Journal of Orthomolecular Medicine* are now indexed and may be accessed at orthomolecular.org/library/jom/index.shtml. Indices for back issues of *Fluoride* are posted at www.fluorideresearch.org/.

MORE ON TRANS FATS

New research is confirming the dangers of *trans* fatty acids. In a seven-year European study, which followed almost 20,000 women, researchers documented 363 cases of breast cancer during the course of the study, and matched these cases to breast cancer-free controls according to age, menopausal status at baseline, date and collection center. Increasing blood levels of *trans* fatty acids were associated with a 75 percent increase in breast cancer risk (*American Journal of Epidemiology* 2008 Jun 1;167(11):1312-20). And researchers from Harvard have reported that increased intakes of *trans* fatty acids may increase the risk of non-aggressive prostate tumors by about 100 percent (*Cancer Epidemiology Biomarkers and Prevention*, Vol 17, pp 95-101). *Trans* fats also increase the risk of infertility in women (*American Journal of Clinical Nutrition*, January 2006). Meanwhile, Canadian researchers are finding that the natural *trans* fats found in butter and meat

fats have health benefits. University of Alberta researcher Flora Wang found that a diet with enriched levels of *trans* vaccenic acid (VA), the natural *trans* fat found in dairy and beef products, can reduce risk factors associated with heart disease, diabetes and obesity. Results indicate that the benefit was due in part to the ability of VA to reduce the production of chylomicrons, particles of fat and cholesterol that form in the small intestine following a meal (www.sciencedaily.com/releases/2008/04/080402152140.htm). The human body also transforms some of the VA into conjugated linoleic acid (CLA), which has anti-cancer properties. Of course the toxic industrial *trans* fats were meant to be “healthful replacements for artery-clogging saturated fats such as tallow, butter and lard,” and the industry is doing its best to ensure the continued use of vegetable oils in processed foods through plant breeding, interesterification and use of gums and stabilizers when the solution is to just go back to using healthy animal fats—tallow, butter and lard.

THE TWILIGHT OF THE GMOS?

A new study exposes the myth that genetically engineered plants can save the world from hunger. Researchers at the

NEW PRODUCTS

Food and agriculture scientists are hard at work creating new products for consumer enjoyment and industry profits. In New Zealand, scientists are working on a breed of cows that produce skim milk, or milk that contains “good-for-you” polyunsaturated butterfat, which is spreadable straight from the fridge. According to food technologist Ed Komorowski, “In future if whole milk can be made to contain unsaturated fats—which are good for you—then it might mean that people change back to whole milk products. The big thing about dairy products is taste, so this would be a way of giving the benefits of taste without the disadvantage of saturated fats” (www.sciencedaily.com/releases/2007/05/070528084649.htm).

Meanwhile, Cargill has developed a new functional system for the creation of frozen desserts and jellied candies with a chewy-creamy texture. The magic ingredient is a “new combination of gums and stabilizers within Cargill Texturizing Solutions’ portfolio.” The product, Lygomme FZ 615, is able to foam water ice at a very high level, meaning that it allows the addition of air to water (<http://www.foodproductiondaily.com/news/ng.asp?n=84243-cargill-texture-ice-cream>). The air-water combination can then be artificially flavored and sold at high prices as a food!

Cargill also makes “a broad range of ingredients . . . including lecithin, hydrocolloids, starch and cultures” that can provide taste and texture in lowfat foods (www.foodqualitynews.com/news/ng.asp?id=83228-cargill-saturated-fat-texturisers). According to Pierre Boulanger of Cargill foods, in meat products, “animal fat is often replaced with vegetable fat. Texture is put back with alginates and other ingredients that can give the real feel of fat.” Perhaps one of these texturizer products contributed to the success of “a flavorful mozzarella that melts and tastes like regular mozzarella, but has only half the

Caustic Commentary

University of Kansas found that genetic modification actually cuts the productivity of crops, with output of GM soybeans about 10 percent less than its conventional equivalent. Professor Barney Gordon of Kansas State University's department of agronomy reports that many farmers have reported lower yields using GMO soybeans. A similar situation has occurred with cotton, where the total US crop declined as the GM technology took over (www.commondreams.org/archive/2008/04/20/8405/). GMO apologists counter that using GMO crops designed to withstand herbicides like Roundup have helped farmers be more productive. But weeds are now becoming herbicide-resistant. Johnson grass, one of the world's most troublesome weeds, has become resistant to Roundup at sites in Arkansas and Mississippi (deltafarmpress.com/soybeans.johnsongrass-scott-0319/). Many studies have indicated that GMO foods can have negative health consequences but perhaps the final blow to GMOs will come with the association of GMO fungal and bacterial vectors with a horrible condition called Morgellon's disease. Named after a skin condition described in the 1600s caused by the human scabie mite, the modern version is characterized by intensely itchy sores that produce multicolor fibers emerging from the

skin. Victims describe a "sensation of things crawling beneath the skin." The fibers, apparently made of cellulose, "are like pliable plastic and can be several millimeters long. . . fine as spider silk, yet strong enough to distend the skin when you pull them. . ." Many doctors insist that the syndrome is a "delusional parasitosis" and prescribe anti-psychotic drugs. Nevertheless, CDC has a webpage on Morgellon's (describing it as "unexplained dermatopathy") and many sufferers have described their very physical symptoms on websites and blogs. Recently a researcher named Ahmed Kilani claims to have analyzed the fibers and found that they contain genetic material from both a fungus and a bacterium that are used in the commercial preparation of genetically modified foods (<http://www.unknowncountry.com/news/?id=6486>). If such reports can be confirmed with additional analyses, we predict a very hasty demise of GMOs.

BUDGET CRISIS

Isn't it interesting how every revelation about dangers in the modern food supply serves as a spring board to promote more processed foods. Thus, the industry has infused warnings about the dangers of saturated fats like butter into reports on

fat." More than 46 million pounds of the new-fangled cheese have been used in the National School Lunch Program since the cheese was introduced in February, 1995 (www.ars.usda.gov/is/AR/archive/mar08/foods0308.htm).

And if the thought of consuming alginates doesn't make you feel too good, consider potato proteins "obtained as processing waste from the potato industry," to be sold as blood pressure-lowering compounds (www.foodnavigator-usa.com/news/ng.asp?id=83904-potato-protein-ace-inhibitors-hypertension), or cranberry proteins, advertised as a "non-dairy, non-soy" source of complete proteins, amino acids, essential fatty acids, dietary fiber, minerals and antioxidants (www.npicenter.com/anm/templates/newsATemp.aspx?articleid=20551&zoneid=8).

For those concerned about gaining weight while eating all those lowfat, high-carb foods, help is here in the form of Hi-Maize resistant starch. This corn-derived product "resists" digestion in the small intestine and is added to breads, cereals, pasta and baked goods. It has a low glycemic index, is lower in available calories than regular carbs and, best of all, it doesn't have to appear on the label! No, it can just be hidden as "fiber," but the effects of the indigestible starch on your digestion may not be so hidden.

Finally, in response to increasing problems with pathogens like *Listeria monocytogenes*, food manufacturers are coming up with products that occur naturally in raw milk, including probiotic raw milk bacteria "to lower blood pressure and protect dairy foods from harmful microbes" (www.ars.usda.gov/is/AR/archive/mar08/foods0308.htm). Another is an anti-bacteria substance called nisin, produced by *Lactococcus lactis*, a bacterium that occurs in raw milk but not in pasteurized milk. USDA has developed a biodegradable polylactic acid (PLA) film from "corn residues" that incorporates nisin and can be used "for wrapping meats and as a liner to coat the insides of drinks containers." Researchers are also testing another film made from nisin and pectin, which would be edible (www.newscientist.com/channel/health/mg19726495.100-cornbased-film-foils-foodpoisoning-bugs.html?feedId=online-news_rss20).

Caustic Commentary

the dangers of *trans* fatty acids. Many schools now stipulate that all foods brought from home must be processed, packaged items in order to protect those with peanut allergies. Reports of widespread vitamin D deficiencies (due in part to avoidance of animal fats) have triggered calls for consumption of more vitamin D-enriched lowfat milk. Now we have the crisis of rising food costs which the pundits are using to promote . . . more processed foods. Their advice includes checking out warehouse deals for white flour and conventional eggs, purchasing skim milk rather than whole (or even reconstituting dry milk) and above all clipping coupons, which help you save a few pennies on expensive processed items (articles.moneycentral.msn.com/CollegeAndFamily/RaiseKids/How-ToFight5FoodBudgetKillers.aspx). The notion that we are not spending enough on food is a foreign concept in these discussions. Actually, you can double your spending on important items like milk and eggs, by purchasing raw milk and pastured eggs, and eliminate the really expensive foods like breakfast cereals, snack foods and frozen dinners, and still come out ahead, especially if you factor in your medical costs. The lesson still to be learned: cheap food is very expensive!

DISAPPOINTING RESULT

The Women's Health Initiative (WHI) Dietary Modification Trial involved over 48,000 postmenopausal women, who were randomly assigned to either a regular unrestricted diet or to a "healthy" diet that was low in fat (20 percent fat) and high in fiber, with at least five servings of fruits and vegetables, and six servings of grains per day—in other words, which followed the dietary guidelines to a T. The "healthy" eaters attended group sessions led by dietitians who administered "intense behavioral modification" to keep them on their diets. And the "healthy" diet women did surprisingly well, maintaining their fat intake at 24 percent of total calories and the dreaded saturated fat at 8 percent. By contrast, the control group consumed 38 percent of total calories as fat with about 12 percent as saturated fat (still not enough fat, especially not enough saturated fat, in our opinion). The "healthy" diet group also consumed more fruits and vegetables, grains and fiber. The women were followed closely for more than eight years while researchers recorded cases of clinically confirmed breast cancer, colon cancer, heart disease, heart attacks and strokes,

confidently predicting, for example, a 14 percent decrease in breast cancer incidence. When the results came, the benefit of years of restrictive eating was. . . zilch! No difference in the incidence of cancer, stroke and heart disease, and no difference in weight gain either (junkfoodscience.blogspot.com/2007/10/junkfood-science-exclusive-big-one.html). Now what we need is a study that compares the outcome for those on a typical American diet low in saturated fat—even the control group's saturated fat intake was far too low to support optimal health—with that of WAPF-ers who take cod liver oil, pile on the butter and cook in tallow and lard.

MORE DISAPPOINTMENT

The latest theory is that cholesterol-lowering statin drugs prevent heart attacks not by lowering cholesterol but by preventing inflammation. The JUPITER (Justification for the Use of Statins in Primary Prevention: an Intervention Trial Evaluating Rosuvastatin) trial was designed to study over 15,000 patients without evidence of cardiovascular disease and with low LDL-cholesterol, but an elevated C-reactive protein (CRP), which is a marker for inflammation and is associated with an increased risk of atherosclerotic cardiovascular events. In other words, the trial was designed to provide justification for giving statin drugs to just about everybody, even those with low-LDL and no history of heart disease. Investigators were to look at the safety of longterm treatment with Crestor (rosuvastatin) compared with a placebo, with primary endpoints being total mortality, noncardiovascular mortality and adverse events. In March, AstroZeneca, makers of Crestor, issued a terse press release announcing that the trial has been stopped eighteen months early "because of unequivocal evidence of a reduction in cardiovascular morbidity and mortality amongst patients who received Crestor when compared to a placebo" (www.marketwatch.com, March 31, 2008). No mention of total mortality, noncardiovascular mortality or adverse events. We can only assume that the overall results of the trial were disappointing and that AstroZeneca stopped the trial to prevent the word from getting out. ☯

Gifts and bequests to the
Weston A. Price Foundation
will help ensure the gift of good health
to future generations.

Beautiful Black Poison

The History of Calomel as Medicine in America

By Jennifer Schmid, Naturopath

New drugs present greater hazards as well as greater potential benefits than ever before—for they are widely used, they are often very potent, and they are promoted by aggressive sales campaigns that may tend to overstate their merits and fail to indicate the risks involved in their use. . . There is no way of measuring the needless suffering, the money innocently squandered, and the protraction of illnesses resulting from the use of such ineffective drugs. *John F. Kennedy, in his Consumers' Protection Message of March 15, 1962¹*

The more things change, the more they stay the same. *French Proverb*

The doctor comes with free good will, but ne'er forgets his calomel.² *American folk saying, mid 1800s*

Calomel,
meaning
“beautiful
and black” in
Greek, was
a derivative
of mercury
that slowly
debilitated
and killed
hundreds of
thousands of
Americans
until the
advent of
antibiotics.

We have all heard about the deleterious effects of mercury and how it is one of the most poisonous substances on earth. In fact, the World Health Organization has deemed mercury unsafe at any level of exposure. Nevertheless, people have always been fascinated with this seemingly magical substance. Mercury, also known as quicksilver, it is the only metal that is liquid at room temperature, and if it spills, the little globules are impossibly elusive to recover. (Note that in the earth, mercury is not generally found in pure form but rather as part of cinnabar, or mercury sulfide.)

Like all heavy metals, mercury (Hg) in any form is extremely toxic to life. The Romans mandated mercury mining in Almadén, Spain as a form of capital punishment. Typically prisoners died after six months to three years of labor.³ The ancient Greeks relied on mercury to manufacture mirrors; to be a member of the mirror guild was considered a high honor, even though most mirror masters died in their 30s, poisoned by their craft. The Mad Hatter in Alice in Wonderland probably used mercury in the felting process for his hats, hence his skewed perception of life. Mercury is also used to extract gold and silver from ore.

Here in the Silicon Valley, a former mercury mine (also named Almaden, probably for its Spanish counterpart) has become a county park, and despite assurances from various governmental agencies, many local residents believe the mine has permanently polluted the land and water for miles around.

If people have known for millennia about the toxic nature of mercury, why would he use it as a “medicine”?

It was in the 16th century that European physicians began experimenting with metals such as mercury and antimony on the sick; one can only imagine their sheer joy (or terror) at seeing the strong effects these metals had on the body! By the founding of the American union, most physicians had decided that the merits of these powerful substances far outweighed the detrimental effects, particularly when used on people who were already ill. However, this observation is far from correct.

The history of medicine in the United States of America is full of drama fit for a soap opera—purgings and bleedings and outrage, oh

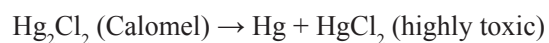
my! If you would like to research this history, however, do not turn to your local MDs, as they will probably not be able to provide you with any texts on the subject. Many of the books that you may find in the local library will contain patriotic descriptions of the great allopathic physicians in our country who, for over one hundred years, poisoned their patients with huge doses of a mercurial substance called “calomel,” believing that these “heroic” doses of a poisonous and powerful metal would cure their patients of whatever ailed them. Calomel, meaning “beautiful and black” in Greek, was a derivative of mercury, and it slowly debilitated and killed hundreds of thousands of Americans. Only in the late 1960s did calomel quietly disappear from the U.S. Dispensatory.

THE CHEMISTRY OF CALOMEL

What is calomel, and why did the doctors believe it to be harmless, despite the sometimes fatal reactions to its administration? Chemically speaking, calomel is mercurous, or mercury, chloride (Hg_2Cl_2) and is formed when elemental mercury (Hg) and mercuric chloride (HgCl_2) come together.



Mercurous chloride is photosensitive, meaning that when it is exposed to UV light it decomposes back to elemental mercury and mercuric chloride, causing it to turn from white to black. The concept of photosensitivity was not discovered until the 20th century, and one can only surmise how UV exposure might have affected the quality of the medicine.

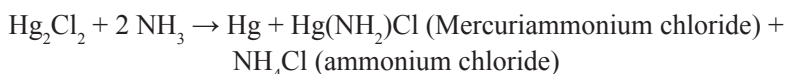


Both elemental mercury and mercuric chloride are water soluble and known to be extremely poisonous. Calomel, on the other hand, is an insoluble salt, and if you ask many physicians and chemists today, they will tell you that only infinitesimal amounts of the mercury in calomel are absorbed. Theoretically, it should simply pass through the intestines and be eliminated in feces. It is much less toxic than other soluble, organic compounds of mercury, such as methyl mercury, responsible for Minamata Disease in

Japan in the 1950s and 60s and considered to be one of the most toxic mercury compounds.⁴ Methyl mercury is the type of mercury that pollutes bodies of water and is found in the fish that we consume. It is different from another organic mercury compound, ethylmercury thiosalicylate, also known as thimerosal, which has been used since the 1930s as a preservative in vaccines. (See below.) Straight mercury is most poisonous as a vapor which forms when liquid mercury is exposed to air; this is why one must be so careful when a mercury thermometer or compact fluorescent light bulb breaks, and why dental amalgams are dangerous.

Another factor involved in the absorption of calomel into the tissues is ammonia, which is a byproduct in the kidneys. Ammonia (NH₃) also causes calomel to disproportionate, or break

down into two different forms of mercury, forming the following reaction:



Thus, if any calomel reaches the kidneys for excretion, the mercury could be rendered even more poisonous after coming into contact with ammonia.

By the 1950s scientists understood that calomel could decompose in the intestines when it came in contact with substances such as sucrose and lactose as well as alkaloids like cocaine; this would create the “more toxic, mercuric derivative” mercuric chloride.⁵ The 1967 edition of the *United States Dispensatory and Physicians’ Pharmacology*, still listing calomel as a medicine rather than a poison, challenges claims that large amounts can be absorbed in the gut: “Most of a dose of calomel is probably eliminated from the bowel; only the dissolved portion, some of which is in the mercuric state, is absorbed. Because of the danger of absorption of toxic

THIMEROSAL: RESPONSIBLE FOR AN EPIDEMIC?

Since the 1930s, ethylmercury thiosalicylate, also known as thimerosal, has been used as a preservative in vaccines and injection compounds worldwide due to its antifungal and antibacterial properties. Comprised of 50 percent mercury, thimerosal is an organic mercury compound that breaks down in the body into ethyl mercury and thiosalicylate and is thought by many parents and scientists to be primarily responsible for the epidemic of autism and other neurological disorders in children over the last 20 years.

According to Boyd Haley, a researcher at the University of Kentucky, the mercury in thimerosal acts as an enzyme inhibitor that can negatively affect the immune system’s ability to deal with toxins introduced in the body, such as the various diseases in the vaccines themselves.¹ When combined with other heavy metals present in vaccines, the toxic effect of the metals is intensified, the same way it is enhanced after exposure to multiple forms of mercury, such as methyl mercury (in fish), ethyl mercury (thimerosal), and mercury vapors (from air pollution and amalgam fillings). Mercury has a particularly synergistic relationship with aluminum. Mercury “eats away” at aluminum, potentially releasing more mercury into the environment or tissues. Consequently, scientists believe that the aluminum present in vaccines may exacerbate the toxicity of the thimerosal.²

Many children experience external allergic reactions such as hives and eczema because of the repeated doses of thimerosal in the childhood vaccine schedule.³ Of far greater concern is the fact that the nervous system can become “intoxicated” or overwhelmed from exposure to mercury. Symptoms of mercury intoxication include memory loss, uncontrollable shaking and loss of balance—some of the same symptoms exhibited by children after receiving a vaccine (or two or three) containing thimerosal. Many of these symptoms do not appear until some time after the vaccine has been administered, which may explain some of the learning problems and mental disorders that could potentially be associated with vaccines. The fetus is also at risk of mercury intoxication if the mother receives thimerosal-containing injections while pregnant.

Currently the Centers for Disease Control (CDC) is “working with” vaccine manufacturers to remove the thimerosal from vaccines on a voluntary basis.⁴ However, at the time of this writing, it is still present in some stocks of hepatitis B, DPT and other vaccines on the recommended pediatric vaccination schedule; all influenza vaccines; and vaccines administered in Third World countries. In 2001 it was removed from the RhoGam shot given to pregnant women with Rh blood incompatibility, although lawsuits against its manufacturer, Johnson and Johnson, are still pending.

1. http://www.mothing.com/articles/growing_child/vaccines/toxic.html, accessed March 8, 2008.

2. <http://www.informedchoice.info/cocktail.html>, accessed April 9, 2008. This site lists all of the ingredients in most available vaccines.

3. Neustadter, Randall, *The Vaccine Guide: Making an Informed Choice*. Berkeley: North Atlantic Books, 1996, 51.

4. www.fda.gov/cber/vaccine/thimerosal.htm. For a list of drugs containing mercury and thimerosal, see <http://www.fda.gov/cder/>.

Paracelsus was aware of the potential to harm patients with too much mercury, and in his many publications he rebuked his fellow physicians for their free use of calomel and other mercurial compounds.

amounts of mercury if laxation does not occur after taking calomel, a saline laxative should be taken the following day.”⁶ Whether or not the calomel is eliminated is a matter of dispute. Of note is the fact that both internal and external use of calomel was known to cause skin reactions and fever, common symptoms after the administration of vaccines containing thimerosal.

THE DEVELOPMENT OF CALOMEL AS A MEDICINAL SUBSTANCE

Paracelsus, born in Switzerland with the name Theophrastus Bombastus von Hohenheim (1493-1541), was one of the first physicians to incorporate chemistry and pharmacy into his therapies. A somewhat controversial figure in the history of medicine, Paracelsus believed in the spiritual nature of humanity and in the unity between material and spiritual. Unlike most modern physicians, he felt that all remedies, no matter how chemical in nature, also had a spiritual component. He adhered to the “Doctrine of Similars” (the idea that like cures like) but in a different way from Hippocrates or homeopathic physicians, as he felt that one must use “poisonous” remedies in order to expel disease, which come out of imbalance and poison within. “It is possible to make good out of evil,” he wrote.⁷ Mercury or calomel, therefore, would be given as a purgative—driving out disease and that which is impure.

When Paracelsus began experimenting with chemistry and heavy metals, no one knew much about them; there was no Table of Ele-

ments, oxygen had not yet been discovered, and no one knew how the body produced blood. Paracelsus not only made many chemical remedies more popular, but he is also credited with having invented several, including calomel. He believed that matter was solely composed of mercury, sulphur and salt. “Basically there are only three kinds of medicine and three kinds of illnesses... each [doctor] will remember to give mercury to the mercurial diseases, salt to the saline diseases, sulphur to sulphuric diseases, to each illness that which is appropriate and fitting.”⁸

If disease is thus manifested from an imbalance of mercury within, for example, one must administer mercury in order to cure the disease.

Compounds were formulated based on the state and origin of the disease.

Paracelsus was one of the first physician-chemists to suggest the use of mercury applied externally to the lesions of syphilis. Yet he was aware of the potential to harm patients with too much mercury, and in his many publications he rebuked his fellow physicians for their free use of calomel and other mercurial compounds. He “urged physicians to reduce their doses, as they were killing patients with mercury more quickly than even the syphilis could do it.”⁹

By contrast, many European physicians

and chemists were loath to prescribe metallic preparations such as calomel because of the toxic side effects.¹⁰ In France, for instance, prescribing external or internal mercury or antimony-based chemicals was grounds for dismissal from the Academy of Medicine. Fear of reprisal was not enough to stop the use of calomel, however. Med-



ical historians credit the Swiss-born Sir Theodore Turquet de Mayerne with introducing calomel into the general repertory of pharmaceuticals in England at the beginning of the 17th century.

Turquet de Mayerne had been a member of the Paracelsan (Iatrochemical) school of medicine and thus experimented with many different formulations. As official physician to Henry IV of France, he wrote a treatise in 1600 espousing “the use of mineral medicines, particularly the antimonials and mercurials.”¹¹ This was enough to stir the ire of the Paris Faculty of Medicine, which essentially decreed via edict that he was never to practice medicine in France again. But rather than give up the use of these chemicals, Turquet de Mayerne left France for England, becoming the official physician to King James I of England. Turquet de Mayerne was also instrumental in the 1618 publication of the first *London Pharmacopoeia*, which was sponsored by the London College of Physicians. Upon publication, “King James I immediately issued a proclamation requiring all apothecaries in the realm to obey this pharmacopoeia,” of which calomel was an important item.¹²

Thus it is only natural that the use of calomel made its way from London to Edinburgh, Scotland, where, until the establishment of the first medical school in the United States in the mid 1700s, most American colonial physicians were trained. Perhaps the two most influential figures in Edinburgh were the Dutch physician and teacher Hermann Boerhaave (1668-1738) and the Scot William Cullen (1710-1790).

Despite their philosophical differences regarding the origin of disease, both men equally championed the use of calomel for a whole range of illness, from fever to gout to dysentery. Boerhaave, “treated all ‘obstructions’ with mercury.”¹³ Cullen popularized the use of calomel in his *Practice of the Physic*, published in 1784. Likewise, in his *Treatise of the Materia Medica*, he offers many different observations about calomel, without actually having any concrete idea about how it works once inside the body. Like his colleagues, he believed that cathartics like calomel, which cause the body to purge from the bowels, did not penetrate the blood, and if they did, they would be quickly expelled from the body via “secretory or excretory organs.”

Cullen was obviously aware that calomel could affect the saliva, the “whole of the alimentary canal [and] perspiration” and felt that it could be used universally for many diseases because it would be “distributed” throughout the body. Although he was not sure how mercury worked, he believed it to be “entirely in the mouth.”¹⁴

Externally, mercury was considered a saving grace for the increasing number of cases of syphilis developing throughout Europe and the Colonies. Cullen and other physicians at the time saw how an external application of mercury could make the genital sores of venereal diseases disappear. On the other hand, Samuel Hahnemann, the founder of modern-day homeopathy, showed that such applications simply caused the disease to go “inward,” sometimes for years, until the symptoms of secondary and tertiary stages of syphilis appeared; most physicians simply confused the symptoms of advanced-staged syphilis with mercury poisoning, since they bore some commonalities.

According to another prominent homeopath, James Tyler Kent, these applications contributed to the spread of syphilis and gonorrhea because men would think they were no longer contagious once the canker was gone but would then infect their wives.¹⁵ Physicians continued to use external applications of mercury to treat syphilis well into the 20th century, until the advent of antibiotics. Additionally, in the Colonies in the 18th century, purging with calomel was often used as “preparation” for small pox inoculation.¹⁶

BENJAMIN RUSH AND THE “HEROIC” DOSE

The first half of the 19th century saw the rise of heroic, or orthodox, medicine among American physicians, and by 1844 “the most common method of treatment. . . was ‘bleeding, calomel, and mineral medicines.’”¹⁷ One doctor was quoted as saying, “Bile to cause, and calomel to cure, everything.”¹⁸

Until the middle of the 19th century, little was known about pathology and physiology, and most symptoms were believed to come from an imbalance in the “humors” or fluids—bile, phlegm and blood. Consequently, the aim of the physician centered around “purging” the body

The first half of the 19th century saw the rise of heroic, or orthodox, medicine among American physicians, and by 1844 “the most common method of treatment. . . was ‘bleeding, calomel, and mineral medicines.’”

of the humors through strong drugs such as calomel, which could have a violent laxative effect.¹⁹ This philosophy, as well as the methods used, had not really changed since the time of Paracelsus. What did change, however, was the strength of the therapies, thanks to men like William Cullen and his American pupil, Benjamin Rush (1746-1813), whose “heroic,” or excessive doses of calomel and other toxic therapies would reverberate for a century.

Benjamin Rush was a longtime friend of Benjamin Franklin, whose letters of introduction opened many doors for Rush. Rush began his medical studies in 1761 at the age of 15 through an apprenticeship in Philadelphia with Dr. John Redman, who according to Rush had one of the most “extensive business[es]” in Philadelphia and who also was a firm believer in bloodletting and “purging,” that is, causing forceful evacuation of the bowels.²⁰ Rush studied with Redman for five years. At the time there were not yet any “well-established” medical schools in the Colonies, and so in September 1766, Rush headed to Scotland, to finish his medical training at the University of Edinburgh, just as Redman had done. (Redman had studied with Cullen and was a protégé of Boerhaave.)

One of the most influential figures for Rush in Edinburgh was William Cullen. Rush biographer, Carl Binger states, “From him Rush got his

notion that all life is an expression of nervous force and that disease is due to a failure of its regulatory powers, leading either to exaggeration of nervous functions or to weakness of them. . . Treatment. . . must aim to build up nervous energy by restorative drugs and diet or to reduce it by bleeding, purging and semi-starvation.”²¹

Another important influence on Rush, perhaps the most important, was Thomas Sydenham, “a 17th-century London practitioner, without academic position or pretensions. . . the first modern clinician.”²² According to Binger, “Sydenham was concerned with the description of symptoms and their changes rather than with speculations in natural philosophy. . . He recognized symptoms as the expression of the struggle between the nature of the sick person and the noxious influences that produced illness. In other words, he saw them as part of nature’s healing activity, and from this he concluded that the doctor’s goal

DENTAL AMALGAMS: WHAT THE ADA DOESN'T WANT YOU TO KNOW

The word “amalgam” means a mixture of mercury with other metals. Dental amalgam fillings containing silver and mercury were introduced in the 1830s; however, the fillings would expand uncontrollably, and thus tin, copper, and zinc were added shortly thereafter. The formula for dental amalgams has remained basically the same for the last hundred years, and there is great controversy over their safety, as more and more dentists join together to speak out about the toxic effects of dental amalgams.¹

Each mercury amalgam filling contains about 50 percent mercury by weight—between 100 to 1000 mg of mercury. On average, one amalgam filling contains the same amount of mercury as one mercury thermometer—500 mg (1/2 gram)—which is enough to make a 20-acre lake unsafe for fishing.² (Many municipalities are taking steps to eliminate the mercury wastewater that is discharged from dental offices into sewage, since this mercury combines with microflora to become methyl mercury, thus polluting the entire food chain.³)

Presented as an economical way to restore teeth, amalgam fillings never stop emitting mercury vapors, from the time they are manufactured to the time they are removed from or fall out of a person’s mouth (or the person with the filling dies). This means that a person with mercury amalgam fillings inhales mercury vapors 24 hours a day, especially when ingesting hot liquids or foods, chewing gum, or even brushing teeth, with the mercury accumulating in all of the tissues. For a pregnant woman, this mercury crosses the placental barrier and begins to accumulate in fetal tissues, long before the baby receives its first thimerosal-containing vaccine, and women with amalgam fillings generally have more mercury in their breastmilk than those without amalgams.⁴ According to Stephen Koral, the average person with dental amalgams inhales about 10 micrograms (mcg) of mercury per day, far above the recommended Tolerated Daily Intake (TDI) of .014mcg Hg/m³ air/kg of body weight as set by the Agency for Toxic Substances and Disease Registry (ATSDR) of the U.S. Public Health Service.⁵ Animal studies show a concentration of mercury from amalgam fillings in the kidneys, gums, jaw, liver, and especially in the digestive tract, and blood levels of mercury in humans correspond to the number of dental amalgams that a person has. In addition, there is an increased release of vapors when other metals are present in the form of gold restorations or crowns, orthodontia, and of course the other metals that make up the amalgam filling itself.⁶

Koral establishes the following chain of toxic events: 1) amalgam releases significant amounts of mercury; 2) the mercury distributes to tissues around the body, and is the biggest source of mercury body burden; 3) the mercury from amalgam crosses the placenta and into breast milk, resulting in significant pre- and post-partum exposures for infants; and 4) adverse physiological changes occur from that exposure on the immune, renal, reproductive and central nervous systems, as well as the oral and intestinal flora.⁷

There is considerable evidence that amalgam fillings cause serious harm to dentists, dental assistants, as well as

must be to assist nature in its struggle and to guide and intensify the healing power of nature. Furthermore, he realized that illness was never a local process but a reaction involving the whole organism.”²³

In contemporary terms, Sydenham’s philosophy would be considered “holistic” in his approach to symptomology, although his primary methods of treatment, particularly during the Bubonic Plague, were calomel and bloodletting. Despite Rush’s admiration for Thomas Sydenham, Rush did not always agree with the Londoner’s methods. Sydenham cautioned against giving too much calomel even if the patient was not salivating, for “dysentery and death” might follow. Rush, on the other hand, claimed that it was not problematic if a patient did not salivate and that one could continue to administer the calomel until salivation occurred.²⁴

Pharmacology during Rush’s studies

was mostly empirical, meaning based on experience rather than today’s double-blind placebo testing. Although many considered the methods of bleeding and purging to be quite barbaric, Rush and his teachers believed these methods to be the best and most helpful measures to cure sickness. Physicians such as Cullen and Rush could not understand how calomel acted in the body, although its effects were plain enough. Medical historian Harris Coulter intimates that they supported the use of calomel not for its therapeutic benefits, but because “they were reluctant to admit to ignorance in any realm of medicine.”²⁵

Ultimately Rush would choose the same treatments he was taught (such as bloodletting, purging via calomel and other cathartics, blistering and water) for every illness in the Colonies and later, the United States. He considered calomel to be the *sine qua non* for any and all ailments, preferring mineral medicines that were not “inert.”²⁶ This philosophy would have a profound effect on the subsequent practice of medicine in America.

Rush graduated in 1768 and returned to America in 1769 after studying briefly in London and Paris. He began his career working with the poor of Philadelphia. He was a major proponent of smallpox inoculation and in the beginning, “his treatment relied more upon diet and drinks than on the use of medicines.”²⁷

to the patients who receive them. Studies done in the United States show a direct correlation between the numbers of amalgams placed by dentists with the amount of mercury excreted in the dentists’ urine. Likewise, dental hygienists who place amalgam fillings without proper controls experience reduced fertility and more miscarriages and birth defects compared to women not exposed to mercury in their workplace.⁸

Why do some dentists and the American Dental Association (ADA) continue to stand by the use of amalgam fillings, despite knowing about the potential and proven toxic effects? Probably because they accept annual royalty payments from the very companies that manufacture them!⁹ Likewise, the potential for litigation is unimaginable if the ADA were to admit that mercury amalgam fillings were toxic, in the same way that vaccine manufacturers do not want to take responsibility for vaccine injuries, and tobacco companies are being forced into trials for lying about the health effects of cigarettes.

Currently about 52 percent of American dentists are mercury-free, having changed over to less toxic forms of dental restoration.¹⁰ For many years dentists could not speak out against the dangers of amalgam fillings for fear of losing their license to practice as a result of the gag rule imposed by the ADA and state dental boards in 1989.¹¹ (The gag rule has been struck down by several courts and overturned by Colorado’s state legislature.) As of January 1, 2008, Norway became the first country to forbid completely the use of amalgam fillings, and Sweden followed suit on April 1, 2008. Similar bans are under consideration in other European nations. Here in the United States Congressional Representatives Diane Watson (D-California) and Dan Burton (R-Indiana) have twice introduced a bill to ban the use of amalgam fillings in the United States, and twice the bill has been blocked by the ADA and FDA.

Many local WAPF chapters maintain lists of biological and holistic dentists who not only practice amalgam-free dentistry but also know how to safely remove and dispose of amalgam fillings.

1. The ADA was actually formed as an organization principally to support the use of amalgam fillings.
2. archives.cnn.com/2000/NATURE/11/16/thermometer.ban.ap/index.html, accessed April 10, 2008.
3. <http://www.sfgate.com/cgi-bin/article.cgi?file=/chronicle/archive/2004/06/30/MNGKT7EC461.DTL>, accessed April 9, 2008.
4. http://www.lichtenberg.dk/mercury_vapour_in_the_oral_cavit.htm, accessed April 9, 2008.
5. Koral, Stephen. *The Case against Amalgam Fillings*, 4, 10, http://iaomt.org/articles/category_view.asp?intReleaseID=288&catid=30, accessed January 16, 2008; see also http://www.lichtenberg.dk/mercury_vapour_in_the_oral_cavit.htm.
6. *Ibid.*, 11.
7. *Ibid.*, 2.
8. *Ibid.*, 14. See Rowland, AS; et al. The Effect of Occupational Exposure to Mercury Vapour on the Fertility of Female Dental Assistants. *Occupat Environ Med.*, 51:28-34, 1994.
9. www.mercurypolicy.org/new/documents/watsonstatementnov5.pdf, accessed April 10, 2008.
10. <http://www.iaomt.org/news/archive.asp?intReleaseID=230&month=5&year=2007>, accessed April 10, 2008.
11. <http://www.thewealthydentist.com/blog/?p=122>, accessed April 10, 2008.

Rush continued to be vocal in his support for heroic doses of calomel for “virtually every disease,” and calomel became the first remedy of choice for practitioners of what became known as “heroic medicine.”

Early in his career he was appointed Professor of Chemistry at the College of Philadelphia. Rush’s lectures were open to the public and he espoused chemistry only in its relation to medicine. He was an excellent orator and was highly esteemed as a chemist, despite his ignorance of modern theories of his time (including the existence of oxygen, discovered in 1771). He was also well published, thanks to supporters such as Benjamin Franklin, who “encouraged” contributions from physicians. In 1774 Rush was chosen as a delegate to the first Continental Congress and became acquainted with many important historical figures, including George Washington and the Adamses, and was a signer of the Declaration of Independence. In 1777, after working as a doctor during the Revolutionary War, Rush left his position in Congress and was appointed Surgeon General (later titled “Physician General”) of the Middle Department of the Continental Army. He resigned this post in 1778 and returned to Philadelphia, at which point he became one of the most influential figures, for better or worse, in American medical history. Much of his influence came as a teacher; between 1779 and 1812 he taught over 2800 students and apprenticed many more. He also served as chairman of the Theory and Practice of Physic at what would become the University of Pennsylvania, and at one time he was called “the greatest physician in the United States.”²⁸

His was a time of various “bilious fevers” and acute diseases, such as typhus, typhoid fever, malaria, cholera, dysentery, yellow fever and dengue. Practitioners had little knowledge of hygiene (although Rush was one of the leaders in this area), and most fevers were lumped together into one illness, with similar treatment—bleeding and purging—prescribed for all. Rush believed in abstaining from alcohol, but nevertheless often prescribed it in copious amounts as a medicine, for example, with a daily dose of cinchona bark (from which quinine is derived). According to Binger, “his fondness for emetics and purges was much in evidence; ipecacuanha, tartar emetic, calomel and jalap” were prescribed “freely;” in fact he believed so strongly in the effects of these medicines that he helped to organize a free pharmacy for the poor in Philadelphia in 1786.²⁹

Rush developed the “heroic dose” of calomel during the yellow fever epidemic in Philadelphia in the autumn of 1793. In September 1793, he came across a book written in 1741, which Benjamin Franklin had given to him many years earlier. As treatment for “bilious fever,” in particular yellow fever, the book recommended “vigorous purges to rid the viscera of their ‘feculent corruptible contents.’”³⁰

Armed with this information, he developed a powder consisting of calomel and jalap, another strong purgative, and recommended that it be given three times daily. Rush later wrote that the medication “perfectly cured four out of the first five patients to whom I gave it, notwithstanding some of them were advanced several days in the disorder.”³¹

Rush lost hundreds of patients during the epidemic and prepared so many doses of his “bilious pills” (made from calomel and jalap) that his hands were rumored to have turned black from the mercury. Even though a great many patients died “despite” the heavy doses of calomel and bleeding and despite the attacks on Rush by his fellow doctors, who did not agree with the harshness of his “heroic” methods, Dr. Rush’s impact on American medicine regarding high doses of calomel would continue for another 70 years, until the end of the Civil War.³²

HEROIC MEDICINE AS STANDARD ORTHODOX THERAPY

Throughout the 19th century medical knowledge grew tremendously, but during Rush’s day, physicians knew little about pathology, diagnostics or physiology. There were as many schools of thought on these matters as there were remedies and therapies.

Men like Rush practiced “heroic medicine,” believing greatly in the benefits of copious bleeding and excessive purging; surgeons were becoming skilled in operating even though they had no anesthesia; there were homeopaths, who believed in minute doses based on the laws of Samuel Hahnemann; the Thomsonians, eclectics and botanists, followed the teachings of Samuel Thomson; the Indian doctors used Native American remedies including sweating; and many who used combinations of these approaches.

There was no health insurance, no licens-

ing, very few medical schools and very little “standardized care,” meaning that everyone had a choice of which kind of doctor to engage. Then as now, those therapies with a chemical basis (such as calomel) were more costly than herbal or homeopathic remedies, so those doctors practicing “heroic medicine” were mainly concentrated in the cities and towns where people with money and wealth tended to live.

Rush continued to be vocal in his support for heroic doses of calomel for “virtually every disease,” and calomel became the remedy of choice for practitioners of what became known as “heroic medicine.”³³ John Eberle, whose 1822-23 *Treatise of the Materia Medica and Therapeutics* influenced many students and practitioners of heroic medicine, said, “of all the articles of the *materia medica*, calomel is undoubtedly the most important, whether we consider it in relation to its purgative operation, or to its more extensive and specific influence upon the animal economy.”³⁴

Despite criticism from many of his colleagues, Benjamin Rush’s treatment using “enormous” doses of calomel and jalap during the Yellow Fever Epidemic in 1793 became the standard prescription as a “panacea” for whatever ailed: “When a practitioner was puzzled about the administration of any medicine in a disease, it was deemed perfectly proper for him to prescribe a dose of calomel. . . . Many physicians believed that the omission of calomel in desperate cases was tantamount to abandoning the patient without a final saving effort. . . . Most regularly trained physicians used these standardized therapies almost exclusively, even though textbooks on therapeutics contained hundreds of alternatives. . . . Heroic medicine became normative, and those physicians who did not conform were chastised by their colleagues.”³⁵

Rothstein goes on to say, “The average graduate (of medical school in the first half of the 19th century) was often completely ignorant of medical practice” and as a result they relied upon their “panaceas.”³⁶

Physicians rationalized the use of calomel with two different approaches. First, it cured disease because of its powers as a purgative and therefore took away the “materies morbid” from the intestines. Second, it had the power to change a person’s disease into a “mercurial dis-

ease,” which was believed to be “self-healing.” According to Coulter, “The mercurial disease itself sometimes got out of hand, however, and remedies were then sought for it, such as general and local bloodletting, saline cathartics, sulphur, [and] iodine.”³⁷

The doses of calomel at the time were at least 6-10 grains, the equivalent to 389-650 mg of mercury, thousands of times higher than what the EPA currently recognizes as the “safe” limit of mercury ingestion. During the 19th century, calomel was given in even higher doses than those prescribed by Rush. One doctor in New Orleans was known to have given 60 grains of calomel per dose (as opposed to Rush’s 10 grains) to children during the epidemics of yellow fever, cholera and diphtheria. Other physicians were known to have prescribed 80 grain or even 120 grain doses or about 3-4 ounces of calomel.

Moreover, calomel was often found in teething powders and given regularly to children. Mercury-containing powders compounded with chalk were given to children with indigestion or vomiting. For respiratory illnesses such as cough, diphtheria and ulcerations in the mouth and throat caused by syphilis, physicians exposed patients to vapors of mercury, known now to be the most toxic form of exposure. Calomel was even used to fight intestinal worms, as it was believed the strong purges would force the worms out of the intestines.

Even Abraham Lincoln suffered from the effects of mercury. In 1858 he began to show signs of mental instability—he would become enraged, he was melancholic, and he was getting into fights. His “outbursts of rage and bizarre behavior,” however, were most likely a result of the “blue mass pills,” given freely as an antidepressant in the 1800s. According to Wayne Bethard, these little blue pills “contained mercury, honey, rose water, licorice root and rose petals; recent research using a typical 19th century recipe for the blue pills showed that each pill contains over 3000 times the amount of maximum daily mercury exposure recommended by the EPA.”³⁸

Fortunately, Mr. Lincoln stopped taking the pills within days of beginning them, once he realized that they were causing the outbursts.

Calomel was often found in teething powders and given regularly to children. Mercury-containing powders compounded with chalk were given to children with indigestion or vomiting.

The physical symptoms that manifest as a result of mercury exposure via calomel are horrific, yet many physicians believed in the benefits of calomel and “had few qualms about using it.”

LIFE ON THE FRONTIER

Why did so many physicians enthusiastically jump onto Rush’s calomel bandwagon? Rush was famous because of his political ties, including his close friendships with Benjamin Franklin and Thomas Jefferson. These powerful friendships contributed to Rush’s reputation as probably the most influential physician in early America and far beyond his death in 1813.³⁹

Despite the relationship between Rush and Jefferson, however, Jefferson remained a critic of heroic medicine, claiming that inexperienced doctors killed more people “than all the Robinhoods, Cartouches and MacHeaths do in a century.”⁴⁰ Nonetheless, Jefferson chose Rush to give the pioneer explorer Meriwether Lewis a two-week crash course in medicine before his famous expedition with William Clark, although Lewis had already received some limited medical training in the military. On their renowned journey, the crew of 52 men set off with a large supply of several medicines, including a few different forms of calomel, thanks to Rush’s recommendations. Historian Volney Steele recalls, “Following Rush’s advice, the expedition carried fifty dozen of the doctor’s bilious pills, a strong purgative containing calomel and jalap, which, according to Rush, would ‘gently open the bowels’—the understatement of the century. This combination of drugs produced an explosive intestinal passage and became known by all who used them as ‘thunderclappers.’”⁴¹

Lewis and Clark used the mercurial preparations extensively, including for the many cases of syphilis contracted by both the men in the crew and the Native Americans with whom they socialized. Despite the “heroic” treatment, the mercury simply suppressed the syphilis rather than curing it, and many men began to show the symptoms of the secondary and tertiary stages of syphilis within months or sometimes years of both the oral mercury (calomel) and its external applications.

Throughout the middle 19th century, calomel remained a popular medicine in the West. Many travelers on the frontier were besieged with cholera, which came in from Europe and could kill a person within twelve hours. Despite the sufferers’ copious diarrhea and dehydration, frontier doctors would administer calomel in order to rid

the system of its disease, and thousands died as a result. Ignorant of the connection between vitamin C deficiency and scurvy, many physicians on the frontier treated scurvy with calomel, but never with success.

Moreover, with the large numbers of single men on the frontier, saloons and brothels flourished, and consequently syphilis and gonorrhea ran rampant. While the mercury injections and oral calomel applications caused the external lesion to disappear, transmission was still possible, especially from women—mostly prostitutes—who had no outer symptoms.

Towards the end of the 19th century and into the 20th century, thousands of people were institutionalized with the mental illness that accompanies the tertiary stage of syphilis, despite (or because of) treatment with the heavy metal.

Up until the mid 1800s, frontier physicians used calomel to treat the diarrhea from typhoid, a disease that was sometimes fatal. The violent purging of the bowels often worsened the patient’s state of dehydration and hastened death.

One group that refused treatment with calomel was the Mormons, who crossed the frontier from Iowa to Salt Lake in the 1840s. The founder of the Mormon religion, Joseph Smith, had watched his brother die after taking calomel. Therefore the religious leader chose Thomsonianism as the therapy for his followers.⁴²

THE EFFECTS OF CALOMEL ON THE PHYSICAL BODY

Joseph Smith was hardly the first or the last person to watch a member of his family succumb to poisoning and death from calomel. Indeed, the physical symptoms that manifest as a result of mercury exposure via calomel are horrific, yet many physicians still believed in the benefits of calomel and “had few qualms about using it.”⁴³

Calomel was used specifically because of its power as a potent laxative, causing complete “explosive” evacuation of the bowels but sometimes vomiting as well.

What were the other problems created by all of this “insoluble” mercury? One journal noted: “. . . the first noticeable effect following the administration of mercury in small medicinal doses is seen in an increased activity of the

secretions, especially those of the intestines. . . . If the action of the medicine is pushed farther, it becomes apparent that we are dealing with a destructive agent. . . . The blood itself is altered in character. . . . and coagulates with difficulty. Processes of repair are interrupted, so that recently healed wounds open afresh; the body becomes emaciated, the face pallid. These effects appear in the most striking manner in the well-known phenomenon of mercurial salivation. . . . In the effort of the system to rid itself of so deadly a poison. . . . the normal avenues of excretion not proving sufficient to carry off this unusual accumulation of dead matter, the salivary glands as a last resource are called to do an unusual duty. . . . [in mercury poisoning] more frequently the patient lingers for ten to twenty-four hours, often enduring all that time atrocious sufferings.”⁴⁴

It was not until after the Civil War that excess salivation was recognized universally as a sign of mercurial poisoning. Some patients were able to recover from their illnesses and from the poisoning, although they tended to be somewhat disabled for the remainder of their lives, especially those who had lost teeth, jaw muscle, or jaw bone in the process.

Reports from alternative journals, such as those of the homeopaths, botanicals, and eclectics, are quite gruesome in describing some of the suffering and deaths resulting from mercurial poisoning from calomel. Partly because of how it accumulates in the tissues, partly because of the sheer amount of exposure in relation to body weight, children and adolescents were particularly affected by the high doses of calomel as well as from the poisoning they probably encountered *in utero*, and many children, if they even survived, endured a lifetime with no teeth, sore gums and a jaw that could open less than an inch. Specialists in surgery began to devise ways of saving patients who were deformed by the poisoning, creating devices that would slowly re-open the jaws that were closed in a fixed position as a side effect of too much calomel.⁴⁵

John M. Scudder, one of the most prominent practitioners of eclectic medicine, described some of the effects that he saw in patients who continued to receive “heroic” doses of calomel even after the onset of swollen gums and salivation: “The mouth feels unusually hot, and is

sometimes sensible of a coppery or metallic taste; the gums are swollen, red, and tender; ulcers make their appearance and spread in all directions; the saliva is thick and stringy, and has that peculiar, offensive odor characteristic of mercurial disease; the tongue is swollen and stiff, and there is some fever, with derangement of the secretions. The disease progressing, it destroys every part that it touches, until the lips, the cheeks, and even the bones have been eaten away before death comes to the sufferer’s relief.”⁴⁶

Rothstein goes on to elaborate that when a person has taken a toxic dose of calomel, not only do the teeth then become loose, rot, and fall out, but the jaw bones begin to disintegrate in flakes and layers. Parts of the mouth, tongue and palate could also rot away, and in this state one existed for the rest of one’s life—provided one actually survived both the disease and the therapy.⁴⁷ Even after small doses for a longer period of time—say, six months—the gums would be swollen, eating painful, and teeth loose, if they had not already fallen out.

CRITICISM AGAINST CALOMEL

It was exactly because of these horrific side effects of heroic medicine’s beloved calomel that Americans began turning to safer, alternative forms of therapy such as botanic medicine, eclectic medicine and homeopathy.

As early as the 1750s some traditional physicians in the Colonies were speaking out against such strong practices and encouraging natural remedies. Two hundred years earlier, Paracelsus had chastised his fellow physicians to give smaller doses, as he recognized that mercury, even in the form of calomel, was a poisonous substance. By 1826, perhaps thanks to Samuel Hahnemann and his concepts of homeopathy, many Europeans were beginning to speak out against the use of calomel. Pierre Bretonneau (1778-1862) was a French physician who saw that local, external applications of mercury compounds triggered ulcerations similar to syphilis on the skin, and in 1837 the Scot, John Hunter, stated that “mercurial medicines caused typical rheumatism symptoms, with administration of more medicine only worsening the patient’s condition.”⁴⁸ American and British physicians came under fire from their continental European

Public opposition to heroic medicine, including the use of calomel, grew exponentially throughout the 19th century as other therapies became more popular.

Throughout the mid 1800s the public continued to rise up against the “heroic” nostrums of medical orthodoxy, turning instead to alternative practitioners for treatment.

counterparts even as late as 1870 for their “mercurial fetishism.”⁴⁹

In America, many were skeptical of doctors, particularly those using “heroic medicine.” Public opposition to heroic medicine, including the use of calomel, grew exponentially throughout the 19th century as other therapies became more popular. Rothstein writes that many of the well-to-do turned to practitioners of homeopathy because they did not want to endure the suffering produced by physicians using bloodletting and drugs such as calomel. Likewise, he states, “In the 1830s and 1840s, a few courageous regular physicians began to criticize heroic therapy. Unfortunately, their circumspect language and the restricted interpretations placed on their statements by other physicians reduced or nullified their effectiveness.”⁵⁰

One of the most vocal and famous critics of heroic medicine was James Bigelow, who in 1835 denounced the use of heroic medicine, which in his opinion was not helpful for “self-limited diseases” such as childhood illnesses. Later, in the 1850s, Bigelow disputed the validity of all heroic therapies in general, including the use of calomel, although he and other physicians were criticized loudly by orthodox physicians practicing heroic medicine.

There was also much self-criticism which the physicians leveled against themselves, although they still continued to use (and abuse) cathartics like calomel. According to Rothstein, one doctor, John Beck, wrote in 1847 that calomel was “‘dangerous, sometimes lethal, abused beyond relief by reckless and foolhardy physicians,’ and—although this was never explicitly stated—of little demonstrable benefit in treating disease. . . He concluded by blaming homeopaths and patent medicines for its excessive use.”⁵¹

Throughout the mid 1800s the public continued to rise up against the “heroic” nostrums of medical orthodoxy, turning instead to alternative practitioners for treatment. In 1845 citizens of Westmorland County in Pennsylvania went so far as to petition their legislature to ban the use of mercury and calomel outright, but the committee reviewing the matter denied the petition, because, “if physicians were to be deprived of all agents capable of doing harm they would have no medicine left.”⁵²

Meanwhile, the orthodox physicians claimed that the public was simply too ignorant to understand orthodox medicine, but that they (the physicians) knew best. Nevertheless, heroic physicians could see that they were losing patients to the alternative practitioners and wanted to get that business back. This is one of the reasons why the AMA was founded back in 1847—with the pretense to improve medical education, but with the real reason to come together against the so-called “quacks” who took away and often cured their patients of diseases and illnesses upon which the heroic measures had no beneficial effect. Many seemingly orthodox physicians used homeopathy with their patients instead of the standard drugs and treatments, but they hid this fact from their colleagues lest they be shunned from the medical societies. On the other hand, for fear of losing more patients, many physicians disguised their penchants for using high doses of calomel and instead proclaimed publicly that they only used small doses.

One reason the physicians were so reluctant to come to terms with the dangers of calomel was because they would then have to acknowledge some truth to the Law of Similars, upon which homeopathy is based. As early as 1844, American physicians started to come forward with research showing that the symptoms of mercury poisoning were very similar to the advanced stages of some kinds of syphilis, a fact which Samuel Hahnemann had already documented in Europe in his *Organon of the Medical Art*, his main treatise on homeopathy.⁵³

During a symposium in 1874 the Detroit Review of Medicine and Pharmacy looked at the use of mercurial medicines. They found that many physicians not only were reluctant to take responsibility for harming their patients through the use of calomel but also claimed that they were responsible for no deaths due to calomel administration. At this same time, a folk saying was created, “The doctor comes with free good will, But ne’er forgets his calomel.”⁵⁴ Likewise, many physicians blamed the “premature decaying” of teeth solely on foods and sugars, rather than on the combined consumption of calomel with refined sugars and flours.

THE CIVIL WAR AND THE BEGINNING OF THE END FOR CALOMEL

Although the idea of bloodletting had faded out of fashion by 1860, “many physicians continued to use huge doses of powerful medications, especially ... calomel.”⁵⁵ Volney Steele, the son of a frontier physician and a doctor himself, who learned to hide his childhood stomachaches in order to avoid a dose of calomel and castor oil states, “During the Civil War, the use of calomel as a purge was still nearly sacrosanct.”⁵⁶

Another reason physicians continued to prescribe large doses of calomel during the Civil War had to do with the development of a new influential industry, the pharmaceutical companies. They made sure that the Union troops were well supplied with their drugs, including calomel.⁵⁷ These manufacturers, who were already growing wealthy through the increased uses of their compounds and patent medicines, were among those outraged in 1863 by the actions of Surgeon General William Hammond, who had commanded the respect of the civilian and military medical community, despite his reputation for being difficult to get along with. This support evaporated “overnight,” however, when on May 4, 1863 Hammond ordered the removal of calomel and tartar emetic from the official formulary of the US Army, called the army supply table. Hammond became convinced that these drugs killed more patients than they helped. But when Hammond removed these medications from the army formulary, much of the civilian medical community arose in revolt. For a generation, medical doctors had competed with a series of other healers, with botanists and homeopaths, whose only unifying creed was that regular medicine used too much calomel.⁵⁸

When Hammond lost the support of the medical community, Secretary of War Edwin M. Stanton saw the perfect opportunity to remove Hammond from office, as their relationship had always been contentious. Hammond refused to resign his post but lost the court-martial trial, which many believed was rigged.⁵⁹ Nevertheless, his directive to eliminate calomel from the military pharmacopoeia had far-reaching effects on the use of calomel in America.

It took several more generations to see the complete elimination of calomel from the Ameri-

can *materia medica*. Although use of calomel had already begun to decline in the middle of the 19th century, many physicians, particularly those in the South, prescribed it through World War II.

Even through the latter part of the 19th century, the East was the only area with a “marked” reduction in the use of calomel. As late as 1905, many old-time doctors were still prescribing heavy doses of the mercurial. According to one source, in 1891-92, over a 12-month period, Americans consumed approximately “13,900 pounds of calomel and other mercurial medicinal preparations.”⁶⁰ In 1909, calomel was still listed as a drug manufactured by the pharmaceutical giant Parke, Davis and Co., and medical textbooks included calomel as a possible remedy.⁶¹ Calomel was removed from the British Pharmacopoeia in 1958, partially as a result of “pink disease,” a type of mercury poisoning that babies got from teething powder. It is unclear when calomel was removed from the United States Dispensatory.

CALOMEL’S EFFECT ON GENERATIONS OF AMERICANS

One can see the detrimental long-term effects of calomel usage in both those who received calomel as well as their offspring. Thousands of Americans were directly poisoned, maimed, and killed by the toxic “heroic” doses of mercury given via calomel, not to mention through other sources of mercury such as amalgam fillings, external mercury preparations, and teething powders.

Harris Coulter expounds eloquently on the severity of America’s poor health in the middle 1800s: “An intriguing question is the responsibility of the medical profession for the generally recognized bad health of Americans in the period, 1830-1860. A recent investigator of this question writes: ‘it would not be too much to say that after 1830 no European traveler to the United States ever forgot to insert somewhere in his published comments on America a few disparaging remarks about the physical appearance of the people.’ About 1850 ‘the nation as a whole began to realize something was wrong with the general condition of its health, that these unkind criticisms on the part of foreign observers had a basis in fact.’

Although use of calomel had already begun to decline in the middle of the 19th century, many physicians, particularly those in the South, prescribed it through World War II.

“*Harper’s Monthly* stated in 1856 that the youth of this country were ‘a pale, pasty-faced, narrow-chested, spinkle-shanked, dwarfed race.’ In 1856 the War Department published the results of its examination of recruits during the Mexican War: American volunteers weighed less than European or English recruits, and there were nearly twice as many rejections of Americans for being ‘too slender, and not sufficiently robust’ or for ‘malformed and contracted chests.’ Worst off, however, were the women. Thomas Wentworth Higginson wrote in 1861: ‘In this country it is scarcely an exaggeration to say that every man grows to maturity surrounded by a circle of invalid relatives, that he later finds himself the husband of an invalid wife and the parent of invalid daughters, and that he comes at last to regard invalidism. . . the normal condition of that sex—as if Almighty God did not know how to create a woman.’

“Calomel was well known to cause deterioration of the teeth, and Higginson states: ‘Perhaps the most universal symptom of this physical decay was the condition of America’s teeth; one seldom talked to a dentist, it was affirmed, who did not despair of the republic.’ It is probably true that the toothlessness of many Americans was due to the doses of calomel they received from infancy, and this medication was doubtless responsible also for many of the other ills described.”⁶²

So how was it that calomel ultimately fell out of favor as a cure-all medicine? Did physicians finally “see the light” regarding the painful and disfiguring effects of calomel usage, or was there another reason?

Certainly antibiotics, diagnostic techniques, advances in pathology, a better understanding of human physiology, and higher profits from synthetic drugs or extracts have all played a role in the demise of calomel as a medicine. The reality is that thousands of people are still injured or killed every year from pharmaceutical preparations, according to industry-sponsored studies published in both the *Journal of the American Medical Association* and the *New England Journal of Medicine*.⁶³ There are simply newer, more expensive drugs that have taken the place of calomel, drugs which manifest their effects in more subtle ways than those of calomel.

Much of the dental industry still uses dental amalgams and chastises those dentists who speak out publicly against them. Some dentists opposing amalgams lost their licenses in the process, in the same way as those physicians who spoke out against calomel back in the 19th century. Parents who protest the use of thimerosal in vaccines are considered paranoid by the manufacturers of vaccines as well as by government officials, even as the same officials formally urge vaccine manufacturers to remove thimerosal from the vaccines.

GENERATION AFTER GENERATION

With the use of calomel continuing on well into the twentieth century, in conjunction with amalgam fillings, heavy metal vaccines, and industrial practices spewing mercury into the environment, is it any wonder that we are a toxic society with epidemic rates of autism, cancer, ADD, ADHD and chronic illness? Could it be that Americans have never really had a break from all that mercury and that for most of us, the effects of mercury have literally been passed down from generation to generation, from mother to child, accumulating to the breaking point?

How have we come to the point where one in 94 boys in America has received the diagnosis of autism? Science shows that mercury crosses the placental barrier between mother and fetus, which is why pregnant women are cautioned against eating certain types of fish (although they are not counseled against getting flu vaccines or amalgam fillings).

On top of all of this, most Americans eat the Standard American Diet (SAD) and depend largely on processed, refined, empty foods that impair their ability to eliminate mercury from their tissues.⁶⁴ This means that Americans are parenting children who not only come into the world with generations of mercury accumulation in their tissues, but who then, with their cereals and baby formulas and pasteurized milk from antibiotic-laden feedlot cows, have no way of ridding their bodies of the heavy metal.

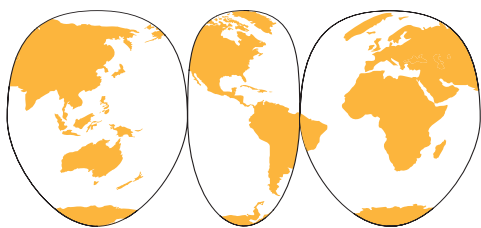
Mercury in its many forms is but one debilitating and lethal toxin in our environment. One hopes that its use in industry will be restricted and even banned in the years to come

so that our children and grandchildren can enjoy healthy lives without wasting precious metabolic resources trying to eliminate this and the many other poisons of our modern world. The best solutions are to teach them about the benefits of real, unprocessed foods grown on rich, healthy soils; environmentally friendly business practices; and healthy living in accordance with nature. In this way, we can begin to reverse a trend that started over 200 years ago and give our children the future they deserve. ☯☯

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Mad as a Hatter

How to Avoid Toxic Metals and Clear Them from the Body

By Kaayla T. Daniel, PhD, CCN and Galen D. Knight, PhD

What's wrong when people follow Dr. Weston A. Price's dietary principles but still suffer from significant health problems? Why do so many people try to eat good fats but find they cannot digest them? What is the reason for digestive distress and dysbiosis despite taking high-quality probiotics and consuming cultured foods and broth? Why are some babies sickly even when the parents eat a nourishing diet prior to conception and throughout pregnancy and lactation?

The answer may be toxic metals. Though we may honor our bodily temples with nourishing foods, we cannot realize our full health potential so long as we remain waste dumps for mercury, aluminum, cadmium, arsenic, lead and nickel. Even the "precious metals" gold, silver and platinum can create problems. Mix well with a dose of chloride and fluoride found abundantly in municipal water supplies and it's no wonder that so many of us are sick and tired.

Health practitioners over the past few decades have also begun seeing more and people "glowing in the dark" because of nuclear waste and weapons. The use of so-called "depleted uranium" weapons in armed conflicts is suspected of contributing to the "Gulf War Syndrome," an array of health problems associated with the Gulf War as well as the ongoing Iraqi war and other conflicts.

Although the mental and physical problems from metal toxicity have escalated in recent years, our very language tacitly acknowledges the historic toxicity of certain metals: “Mad as a hatter” from the Civil-War-era’s crazed use of mercury sizing in hat manufacture, “gold fever” from the murderous greed of early prospectors, “lead poisoning” as black humor for “getting shot,” and, more recently, “get-the-lead-out” exhortations from trainers who would have us exercise long and hard in order to sweat out toxins and melt excess fat.

The medical establishment currently recognizes only acute metal toxicity, the type that leads to painful, sudden and severe symptoms, including cramping, nausea, vomiting, sweating, headaches, breathing difficulties, convulsions, and impaired cognitive, motor and language skills. With acute metal toxicity, the effect of consumption, inhalation, skin contact and other exposure is clear. Acute toxicities occur most often on job sites when workers are exposed to hazardous substances, though accidents occur on the home front too. Pesticide, herbicide and chemical fertilizer spills at homes and schools, for example, are some of the common reasons why previously healthy people join the ranks of the chemically sensitive and environmentally ill.

In 1986 Congress established the Agency for Toxic Substances and Disease Registry (ATSDR) of the Department of Health and Human Services in order to deal with effects of hazardous environmental substances on human health. In cooperation with the U.S. Environmental Protection Agency, the ATSDR compiles priority lists of hazardous substances each year. Out of 275 substances on the 2007 list, arsenic is number one, lead two, mercury three and cadmium seven.¹ Of these fearful four, mercury is the most studied, but all four have similar adverse effects on the body.

CHRONIC EXPOSURE

Victims of acute metal toxicity make the six o’clock news, but far more people suffer adverse effects from low-level, chronic exposure to multiple metals. Because the symptoms may develop over a period of many years and are often interchangeable with other signs of poor health, sufferers rarely recognize slowly accumulating mercury and other metals as the culprits. Thus, although nearly everyone on the planet carries some toxic load, not everyone shows obvious and distinguishing ill effects. After all, fatigue, digestive distress, aching joints and depression, to name just a few everyday complaints, are considered “normal” in our increasingly sick and aging society. Almost all chronically sick patients, regardless of their specific symptoms or diagnoses, have sustained significant exposure to toxic metals. Mercury toxicity should be assumed in anyone who has—or has had—amalgam fillings or root canals and who also chews.² Aluminum, cadmium, lead, cobalt and arsenic and other metals are rarely absent from such patients.³

Dose, duration, manner of exposure, biochemical individuality, genetic propensity, diet quality and stress levels combine to determine the degree of ill effects. Good nutrition is key because a deficiency of vital metals will lead to their replacement by toxic metals in enzyme binding sites. Lead will replace calcium, for example, cadmium will replace zinc, and aluminum and nickel will replace magnesium and manganese. These

substitutions will allow a certain degree of vital enzyme function, but in time lead to physiological dysfunction.^{4,5}

Sadly, it no longer takes decades or even years to become toxic. Babies are born toxic because mercury and other metals pass through the placenta from toxic mothers. The Environmental Working Group reports that blood samples taken from the umbilical blood of newborns show an average of 287 toxins including mercury, fire retardants, pesticides and Teflon chemicals. This is a primary reason why babies come into this world with compromised digestive and immune systems. The National Academy of Sciences (NAS) estimates that over 60,000 US children are born each year at risk for life-long problems because of dangerous blood levels of mercury in their mothers.⁶

Vaccinations containing mercury and aluminum then add to the burden, often sending an already vulnerable child over the edge into autism, ADD/ADHD, life-threatening allergies and autoimmune diseases. Thimerosal has mostly been removed from children’s vaccines. However, old batches are still given to children, if not in the US then abroad. As for new batches, even the FDA admits that they may contain trace amounts.^{7,8}

The Weston A. Price Foundation has educated parents about how to optimize their nutrition prior to conception. But unless parents also detoxify themselves of toxic metals before conception, this trend will not reverse, and we will continue to see the degeneration of our children’s health.

A LITANY OF ADVERSE EFFECTS

Evidence that toxic metals cause, contribute to or accelerate the development of chronic illness is widely available in the scientific literature. Metal toxicity adds to oxidative stress, inhibits antioxidant production and utilization, blocks enzyme functions and poisons sulfur biochemistry, adversely affecting the function of every cell, tissue, organ and system in the body. It would be wrong to blame the epidemics of fatigue, depression, anxiety, food and drug addictions, insulin resistance, diabetes, learning disabilities, allergies, asthma, digestive distress, adrenal gland exhaustion, hormonal imbalances,

memory loss and other all-too-familiar health problems solely on metal toxicity but metals certainly can play a major role in these conditions.⁹

Although symptoms of poisoning by the various metals commonly overlap, different metals tend to favor different sites. Mercury and cadmium accumulate heavily in kidneys, but cadmium doesn't cross the blood brain barrier the way mercury does. Cadmium overload is

associated more with peripheral neuropathy than central nervous system problems. Lead deposits primarily in bone, and it disrupts erythropoiesis, the formation of red blood cells, contributing to poor bone health, osteopenia and osteoporosis.¹⁰⁻¹²

The litany of adverse effects from exposure to mercury, lead, cadmium and arsenic is a long one. It includes physical, muscular and neurological degeneration. Toxic heavy metals can cause, contribute to or accelerate the development of Alzheimer's disease, Parkinson's disease, muscular dystrophy, multiple sclerosis, and other brain and neurological disorders.¹³

MERCURY, MERCURY EVERYWHERE

Mercury is number three on the ATSDR hazardous metal list.¹ Yet doctors and dentists routinely assure the American public that the same mercury that is so dangerous when spilled on the floor becomes mysteriously and miraculously safe in the mouth as part of silver-colored amalgam dental fillings. (Astonishingly, that is about to change thanks to a successful lawsuit against the FDA by Consumers for Dental Choice and Moms Against Mercury, which ended early in June with the FDA agreeing to change its website on the issue of mercury and to reclassify mercury amalgam fillings by June 2009. It's unlikely that the FDA will forbid the use of amalgam fillings, but this is clearly the beginning of the end for the decades-long cover up between the American Dental Association and FDA. The government website has already been changed and reads "Dental amalgams contain mercury, which may have neurotoxic effects on the nervous systems of developing children and fetus."²)

The average American also takes in mercury through FDA-approved over-the-counter contact lens solutions, nasal sprays and hemorrhoid remedies, prescription drugs and vaccinations, especially flu shots. Mercury exposure is also ongoing from contaminated water supplies, commercial crops grown from seeds treated with mercurial fungicides, agricultural soil polluted with mercurial pesticides and fertilizers, and air contaminated from a variety of industrial sources, including coal-burning power plants and crematorium smokestacks, which spew mercury vapors from the amalgam fillings contained in corpses. Mercury thermostats in the World Trade Center towers would have spewed mercury all over New York and the east coast.³⁻⁵

Pregnant women and others at high risk from mercury exposure are rightly warned to avoid tuna, swordfish and other seafood. What happens is that mercury in the water—either because of natural volcanic explosions and off gassing from the earth's crust or unnaturally because of industrial pollution—is methylated by algae and bacteria in the water, then goes up the food chain into fish and seafood.

Even the FDA warns of this danger, and online calculators at www.oceana.org and www.gotmercury.org can help visitors figure their personal danger from a long list of fish. The figures for all of us, pregnant or not, are frightening, with a single serving of ahi sushi exceeding a week's safe dose. Many commonly eaten fish are surprisingly low in mercury, especially North Atlantic small fish, as opposed to the large predatory ones or the estuary bottom dwellers. Fortunately, mercury accumulates in the protein portion of fish, not the oil, so we need not—and should not—avoid cod liver oil.

Unfortunately, the FDA and other agencies exploit the fear of fish to distract the American public from the dental issues. The Environmental Protection Agency (EPA) identifies dental amalgam as the primary source of mercury exposure, and the World Health Organization and Health Canada acknowledge that the mercury burden from multiple amalgam fillings far exceeds that in people who eat a lot of fish. More than ten years ago the *New England Journal of Medicine* indicated that amalgam fillings pose a far greater danger than fish.⁶⁻¹⁰

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REDUCING ENVIRONMENTAL EXPOSURE

COOKWARE: Glass, cast iron, carbon steel, titanium and lead-free crock pots (slow cookers) and enamels are best. Obtain Material Safety Data Sheets (MSDS) data from the manufacturers for evaluation if possible, especially in the case of enamels and slow cookers.¹ The FDA alleges that the risks from lead in slow cookers are acceptable, but consumers may want to find products that have been proven lead free and not just meeting “FDA standards.” Hamilton-Beach claims its crockpot is lead free. Aluminum and teflon are well known for their health dangers. Less known is the fact that stainless steel exposes people to accumulations of carcinogenic nickel, and often cobalt and chromium, as well. Although some high-grade stainless steels are supposed to be risk free, they may be so only in water at near-neutral pH. None of the 300 and 400 series stainless steels evaluated are stable in tomato acids and salt.² Series 316 corrosion-resistant stainless steel is the best (used in Saladmaster brand cookware). It is resistant to tomato juice and vinegar, but corrodes with exposure to citric acid and salt (so add salt after cooking). Sadly, Corning glassware is no longer in production, but eBay is a good source. There are many high-end enamel cookware products, including Le Creuset .

RESTAURANTS: As the FDA requires restaurants to use stainless steel pots and vats, minimize restaurant patronage, especially at buffets where salty and acidic food, like tomato sauces and pastas sit out in stainless warming trays for extended periods of time.

THERMOSES AND WATER CONTAINERS: Avoid stainless steel thermoses. The old-fashioned glass-lined thermoses are best. For water containers, avoid the newly chic and sanitary aluminum and stainless versions. Glass would be perfect, except for the breakage factor.

PERSONAL CARE PRODUCTS AND COSMETICS: Some cosmetics have aluminum bases. “Natural” mineral powders may contain bismuth, an all-natural but dangerous mineral. Antiperspirants are a primary source of aluminum, and they prevent us from sweating the carcinogenic metal toxins out through the skin, a situation that amplifies the risk for women who are also getting exposed to nickel from sweating while wearing underwire bras.

JEWELRY: Those very sensitive to metals will need to limit jewelry to special occasions. The nickel found in cheap costume jewelry is especially dangerous. at least for the posts, hooks, and other fastenings that come in direct contact with the skin. Earrings as well as the rings and studs used in body piercing should be avoided or worn sparingly if one can not verify their origin and metal composition with confidence. Again pure titanium is preferred for maximum safety.

ORTHODONTICS AND SURGERY: Many orthodontists and surgeons use stainless steel (which contains nickel) for braces, wires, palate wideners, etc. This is especially unfortunate because exposure 24/7 in a hot environment wet with saliva is a formula for metal toxicity. Sadly, many of the products promoted as “titanium” are actually mixes of titanium and stainless. It’s now illegal for dentists and surgeons to use dental implants, body replacement parts and mesh made of nickel, but doctors may still leave carcinogenic stainless staples in patients after surgery. For most people titanium is a safe choice, though a small number of people have reacted to that metal as well, perhaps reflecting problems with purity.

Toxic metals also contribute to the plague of female reproductive system problems such as menstrual difficulties, infertility, miscarriage, pre-eclampsia, pregnancy-induced hypertension and premature births. Toxic metals have also been linked to increased breast cancer risk. A recent study out of Georgetown University showed that the metals mercury, copper, cobalt, nickel, lead, tin, chromium and vanadate activated estrogen receptor alpha sites in human breast cell cancer lines in ways similarly to the human estrogen estradiol. The metals also altered gene expression, perturbed hormonal balance

and accelerated the proliferation of the breast cancer cells.¹⁴

Mercury and other toxic metals further contribute to cancer development and growth by preventing the biosynthesis and functioning of vitalethine, an endogenous regulator of key metabolic pathways necessary for a “vital” immune system. Adequate natural vitalethine controls immune responses, probably to all types of cancer and to infectious agents like AIDS. Evidence is accumulating that vitalethine is also crucial for proper cholesterol metabolism, red blood cell production and diabetes prevention.¹⁵ For our bodies to make natural vitalethine, we need the sulfur-containing amino acid, L-cysteine along with vitamin D-pantothenic acid.¹⁶ However, if high-quality, usable protein and cysteine become deficient because of poor diet or poisoning by metals, our bodies will try to compensate by making cysteine from the essential amino acid, methionine through the

VACCINATIONS: There are many reasons not to vaccinate, including the injection of mercury and aluminum additives directly into the bloodstream.

NATURAL MEDICINES: The toxicity of pharmaceuticals is well known, but natural medicines don't get off the hook. Colloidal silver has caused consumers to turn blue-gray from silver poisoning. Colloidal mineral toddlers have left people with heavy metal toxicity as well as toxic levels of needed macro or trace minerals. Some Ayurvedic, Tibetan and Chinese preparations have proved to be high in mercury, lead and arsenic, either because of alleged medicinal values for such substances or unintentional contamination.³⁻⁷ Herbs picked from areas near highways are often contaminated with cadmium, lead and manganese.

SMOKING: Don't smoke or expose yourself to second hand smoke unless you want cadmium poisoning.

DENTAL WORK: Amalgam fillings may contain cadmium, zinc, tin, copper and silver in addition to mercury. Metal crowns are a problem with any metal, even expensive gold. Porcelain crowns may have metals hiding beneath. Root canals, implants, partials and dentures all contain potentially problematic ingredients. With dentistry, there are no truly good solutions, only ones that are less dangerous.⁸ The worst of this is, of course, the amalgams. They should be removed, but not during pregnancy or lactation, and only by a holistic dentist trained in safe removal. Removal of amalgams must be performed using the dental protocol established by the International Academy for Oral Medicine and Toxicology (IAOMT).

HOUSEHOLD CLEANING PRODUCTS: Think green products by reputable companies such as Seventh Day, Mrs Meyer's and others. Beware of numerous unethical companies that have been jumping on the "green" bandwagon.

INSECTICIDES: Beware of suggestions that you keep it simple and natural by using Borax. Never expose yourself to boron-containing solutions repeatedly or for extended periods of time. People have died from overexposure to boric acid, including the boric acid douches recommended by some doctors for yeast infections.

Readers may find this a grim and alarming list of "no's." However, many of the suggestions are do-able, especially if we take "baby steps" and change one habit at a time. And although ill people need to dramatically reduce exposure and stay as non toxic as possible, most of us need not worry about perfection so long as we closely follow a Weston A. Price style diet and regularly detoxify as explained elsewhere in this article. In other words we can enjoy life as long as we eat well and "eat dirt."

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toxic intermediate homocysteine. Problematic metal toxins in the body may bind and interfere with the conversion of homocysteine, trapping it so that it accumulates metabolically.¹⁷⁻¹⁹

High homocysteine levels are markers of cardiovascular problems, cancer and other diseases of industrial societies, and also of poor and premature aging. They are associated with arterial plaque, neoplasia, tumors and a long list of metabolic imbalances.²⁰⁻²² Homocysteine levels are higher in most vegetarians because of inadequate dietary protein and B vitamins (especially B₁₂) in general or excess soy in particular.²³⁻²⁶ Soy is marketed as a "perfect protein" because it contains all the essential amino acids, but "contains all" is not the same as contains optimum—and usable—levels and ratios. In terms of helping the body to handle metal poisoning, soy is an especially inferior protein because its cysteine content is tied up in

and largely made unavailable by protease inhibitors.^{27,28}

Thirty percent of elderly persons (both male and female) have elevated homocysteine levels. Twenty nine percent of vegetarians have elevated homocysteine levels (caused by the relative lack of methionine and vitamin B₁₂ in their diets and/or excess soy consumption) compared to just five percent of omnivores. Among symptomatic atherosclerosis patients 13 to 47 percent (possibly more) have elevated homocysteine levels.²⁹ Although supplemental B₆, B₁₂ and folic acid are an inexpensive, often-lifesaving way to

lower homocysteine levels, highly toxic people sometimes become deathly ill from them, most probably because the absorption of B vitamins triggers this metabolic homocysteine pathway and results in a massive release of associated metal toxins into the bloodstream.³⁰

BIG FAT PROBLEM

To metabolize fat we need lipoic acid, which is yet another critical vita-nutrient that is poisoned by toxic metals. Failure to properly digest fat is an increasingly common problem and one of the key reasons some people decide that a traditional high-fat diet is “not for them.” Although loss of the ability to digest fat may follow from years on a low-fat diet, this isn’t a simple question of “use it or lose it.” People who stuff themselves with bad fats or seek to avoid all fats are more likely to accumulate toxic metals, which, in turn, will affect their ability to properly digest, assimilate and utilize fats. Loss of lipoic acid to metal toxicity interferes with energy production, toxin cleanup operations, blood sugar regulation and maintenance of a healthy weight.³¹

PRO OXIDANTS AND ANTIOXIDANTS

Mercury, cadmium, arsenic, lead and other toxic metals promote the formation of hydrogen peroxides, lipid peroxides and hydroxyl radicals and interfere with critical antioxidant processes. The body is thus depleted of critical protective agents.

Glutathione is one of the body’s primary intracellular antioxidants. When toxic metals such as mercury or cadmium bind with glutathione, both the toxic metals and the glutathione may be excreted from the body in the bile. While it’s good that the toxic metals leave the body, the process depletes cells of glutathione. This is akin to throwing the baby out with the bathwater!³²⁻³⁴

Making matters even worse, mercury inhibits the activities of glutathione reductase and glutathione synthase, the two key enzymes critical to glutathione metabolism, and interferes with the function of superoxide dismutase, another enzyme needed by the body for antioxidation.³⁴⁻³⁷

ANTIBIOTICS AND TOXIC METALS

Recently, another toxic metal issue has emerged: *Candida albicans* and other resistant pathogenic organisms that accumulate because of antibiotic use. These microorganisms are capable of diverting methyl groups (CH₃-)—needed for immune and other bodily functions—for their own diabolical purposes. This not only means that toxic homocysteine doesn’t get converted to nutritious and safe methionine, but also that elemental or ionic mercury is converted into the far more toxic, methylated mercury. Methylated mercury has far greater affinity for fatty tissues, and is far more difficult to remove from the body.³⁸⁻⁴⁰

Researchers at the Heart Disease Foundation in New York found that antibiotics used to treat infection were not effective in the presence of heavy metals such as mercury and lead. These metals coexisted with infections such as *Chlamydia trachomatis* and *Herpes simplex*, as well as with cytomegalovirus and other microorganisms, including viruses associated with cancer.⁴¹

Tragically, the study of toxic metals is largely overlooked in the training of both doctors and nutritionists, even though knowledge of their adverse effects could provide the answers to many puzzling clinical case studies.

So where do we start with this seemingly insurmountable problem of toxic metal overload? First and foremost, we must avoid exposure, at least to the best of our abilities. Since total avoidance is well nigh impossible, we need to also actively detoxify or else the build up of toxins in our bodies will continue. The two main areas to clean up are diet and environment. Over diet, at least, we have considerable control.

A PROTECTIVE DIET

A Weston A. Price Foundation diet is protective against toxic metals for two reasons: it minimizes exposure, and it contains the nutrients needed to aid with detoxification.

First of all, we need good quality animal protein from meat, poultry, fish and egg yolks. These contain plenty of L-cysteine and L-cystine, the sulfur-containing amino acids necessary for detoxification, immune support and antioxidant protection. Good quality protein is also high in zinc, which not only protects us from the toxic metal cadmium but also is critical to many metabolic pathways. Buffalo meat is especially high in cysteine and cystine.

We also need plenty of taurine, which is found in significant amounts only in animal foods. While it’s true that our bodies can produce taurine from cysteine and methionine metabolism, that presumes we get enough cysteine, methionine and B vitamins to begin with, and that we are healthy enough to produce it. Taurine serves as an important water-soluble antioxidant and is also needed to excrete toxic metals via the bile.

Animal proteins are also our best sources of pantothenic acid (B₅), a key nutrient in many detoxification protocols. Liver is especially high in pantothenic acid and other critical B vitamins.

Don’t be afraid of red meat. People who purposely avoid red meat tend to eat more fish. Although fish contains healthy fat-soluble activators and EPA and DHA fatty acids, people who consume more than two fish meals per

week tend to show very high serum levels of mercury. This is especially true if they consume a lot of tuna, swordfish or shark. Tuna, codfish and haddock also concentrate cadmium. Oysters do contain large amounts of cadmium but also large amounts of zinc, which serves to protect us against cadmium toxicity.

Meats need to be free-range and organic. The livers and kidneys of factory-farmed animals usually contain significant amounts of cadmium.

Good quality fats promote overall good health and ongoing detoxification. Although many popular books advise us to avoid animal fats because poisons accumulate in them, the same fat will help us rid the body of those toxins. However, it is obviously best to consume free-range and organic animal products that are low in poisons to begin with. It's also important to remember that many of the poisons in pesticides, herbicides and fertilizers used on commercial crops are water-soluble, not fat-soluble.

The fats found in processed, packaged and fast foods add to metal toxicity, particularly nickel toxicity. Partially hydrogenated fats are manufactured by taking cheap and usually rancid oils from soy, corn, canola and cottonseed and mixing them with particles of nickel oxide. The combination of oil with the nickel catalyst is then subjected to hydrogen in a high-pressure, high-temperature reactor. Traces of nickel always remain in the finished product.

In contrast, good fats are vital for detoxification. Acylglycerols, like the monolaurin in

coconut oil, reportedly are fat-soluble chelating agents for methyl mercury, and perhaps even dimethylmercury. They serve as a unique oil-based chelating agent.⁴²

Cultured and fermented foods such as beet kvass, kimchi, sauerkraut, clabbered milk, pima cream and homemade yogurt contain beneficial microorganisms that contribute to gastrointestinal health. People with healthy gut flora are better able to handle the inevitable exposure to toxic metals, including the mercury found in fish. In contrast, people who do not have healthy gut flora are more prone to candida and other pathogenic bacterial and fungal overgrowth that change inorganic mercury into the more toxic methylated and dimethylated mercury, thus increasing the potential for fat-soluble retention and damage.

Bone broth offers a time-tested way to heal the gut of "leaky gut syndrome." A gut lining with integrity will better succeed in keeping out toxic metals. Broth is high in the amino acid glycine, which along with cysteine and glutamic acid is a component of glutathione, which the body must manufacture in order to detoxify toxic substances.⁴³⁻⁴⁵

Kombucha tea is sparkling fermented beverage that contains D-saccharic (D-glucaric) acid, which not only binds and pulls toxic metals out of the body, but inhibits glucuronidase, an enzyme that would otherwise hydrolyze the glucuronides of fat-soluble toxins. This prevents them from being recycled back into the fat, instead of being excreted.⁴⁶ No wonder kombucha has a reputation as a longevity elixir!

A diet low in grains—particularly gluten- and gliadin-containing grains—has helped many people restore their gut health. However, traditional preparations including soaking, will lessen the likelihood of ill effects from any of the grains.

Foods high in B₆, B₁₂ and folic acid are especially important. These B vitamins are critical for keeping homocysteine levels in the normal range. When inadequate in the diet, the body cannot convert the amino acid methionine to cysteine through the homocysteine intermediate as needed. This results in homocysteine build-up, which will make metal toxicity worse. True vitamin B₁₂ usually is found in animal products. The best foods for B₆ also come from animals and include beef, poultry, eggs,

NOT THE BRIGHTEST IDEA

Even as the old mercury-containing glass thermometers have quietly disappeared from the marketplace, a new home mercury danger has emerged in the form of "energy efficient" supposedly "green" CFL fluorescent bulbs. Broken CFL bulbs release mercury vapors and can turn your home into an environmental hazard zone. The EPA has a web page dedicated to the clean-up of broken CFL bulbs, but packaging contains neither warnings nor special handling instructions.

Although the amount of mercury released by one of these little spiral bulbs can exceed U.S. federal guidelines for chronic exposure, environmentalists continue to recommend them as though the energy-saving benefits for the planet outweigh the considerable personal risks. (These bulbs actually save very little in terms of overall home energy usage.) Most people do not even know that the bulbs contain mercury, but are somehow expected to exercise "common-sense caution," such as not using compact fluorescents in table lamps that could be knocked over by children or pets.¹⁻³

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sardines and mackerel. Some sources of folate are meat, fish, poultry, milk, liver, beans, sunflower seeds and many vegetables.

For many it is helpful to avoid casein, especially as found in fractionated food products such as shake powders. Although some people react even to the casein that is a natural component of whole raw milk, butter and cheese, the worst problems seem to come from manufacturing processes involved in fat removal and pasteurization. The ingredient casein is a fractionated milk protein product with elevated methionine levels and extremely low levels of the amino acid cysteine. This stimulates the body to make cysteine through the toxic intermediary homocysteine, worsening any effects of metal toxicity.

To avoid toxic metal buildup, we must avoid processed foods. Processed foods contain many unwanted metals. Sodium aluminum phosphate, for example, is used as an emulsifier in processed cheese and potassium alum is used to bleach flour. Alum is also a “spice” in commercial pickles. Cadmium is used as plating material in food processing plants. Processed foods and drinks also contain chloride, fluoride, aluminum and other harmful compounds from municipal water supplies, not to mention the remains of excreted pharmaceutical drugs. Processed foods also remove protective zinc and calcium in the refining process, making people more vulnerable to the toxic effects of cadmium, which is not removed during the milling process.

To make matters worse, many processed food products are packaged in aluminum foil. Take-out items can “take out” our health because of aluminum containers. Beer and soft drink cans come from aluminum. Solders used to seal some cans are a common source of cadmium.

Fruits, vegetables, beans and grains should be organic. Rice and wheat grown in soil contaminated by sewage sludge or super phosphate fertilizers may be toxic in cadmium.

Commercial seeds are treated with mercurial fungicides. Antioxidants from fresh, locally produced foods, that have not been sitting around oxidizing for weeks or months, can help to minimize the oxidation and solubility of the toxic metals.

Chlorella is widely sold as a “green drink” or supplement to health-conscious individuals trying to detoxify mercury and other metals. The chemistry may support the claims. These are known as porphyrin-like products because once the healthy magnesium of the chlorophyll is assimilated, a porphyrin-like ring is left to bind and help neutralize and eliminate metal toxins. Blue-green algae, spirulina, chlorella, and barley greens are similarly sold as “superfoods.” On the downside, these greens may contain analogues of B₁₂ that worsen cases of B₁₂ deficiency, putting people at risk for accumulating higher homocysteine levels. So if you use these products, be sure to eat organic liver as well.

Finally, it is important to drink clean water. Tap water typically contains aluminum, fluoride, chlorine—not to mention pharmaceutical drug residue and other contaminants. In some parts of the country well water is contaminated with lead or other metals, and nitrates and other chemicals from fertilizers.

LABORATORY ASSESSMENT

Hair mineral analysis offers a valid and inexpensive way to test someone’s toxic metal status, as well as provide insights into nutritional status. The growing hair follicle is well supplied by the blood vessels, and blood transports both essential and toxic elements present in the body. These elements are incorporated and stored in the hair proteins, which are evaluated in the test. Hair tests can evaluate someone’s toxic metal and nutritional status over the past three months.^{47,48} Analytical Research Laboratory (ARL) in Phoenix and Biochemical Laboratories in Edgewood, New Mexico are labs with good experience in hair testing, although there are many other good labs around the country.

The downside to hair analysis is that laboratory reports can be difficult to read and evaluate correctly, and there is some controversy about how to do the assays and what constitutes normal ranges of toxins and nutrients. In most cases, the first test will show low levels of toxic metals. Aluminum typically shows up in the first test, sometimes with low levels of mercury and arsenic. However, to correctly interpret the test, it is necessary to look at the overall levels and ratios of macro and trace minerals. In all probability, there will be evidence of “hidden” toxicity. This means that the body in its wisdom has stashed mercury and other very dangerous metals as deeply out of the way as possible.⁴⁹

If a client follows the first hair test with an effective detoxification program, follow-up hair tests will typically reveal not only higher levels of the metals present in the initial analysis but also the emergence of other, more deeply buried ones, such as cadmium and lead.⁵⁰

Cadmium and lead rarely show up on the first hair mineral test because the body binds them very tightly and keeps them deeply stored in the liver, joints and bones. For example, ionized elements that are nearly the same size as calcium (e.g., some radioactive elements) and magnesium (e.g., nickel) often are found in the bone where they can poison and damage the stem-cell-producing bone marrow. Often clients require months on a detoxification program before they begin excreting cadmium and lead. Lead may take as long as a year or more to show up. Making matters more complicated, lead might show

up in the hair after release from one storage site, decline on a subsequent test but later rise again as it is released from yet another site. For these reasons, hair mineral analysis testing needs to be performed as an ongoing process.⁵¹

Nickel is a growing problem because of partially hydrogenated fats in the “Standard American Diet,” the popularity of nickel-containing jewelry and the widespread usage of stainless steel in the processing of foods, beverages and pharmaceuticals. Unfortunately, nickel rarely shows up in hair even when present at toxic levels elsewhere in the body. For nickel, it is better to analyze sweat, which is one way the body attempts to get rid of this carcinogenic metal. (The other way is excretion via the bowels.) Nickel also causes hyperviscous and hypocoagulable blood so a clotting profile of the blood analyzed by a Sonoclot™ or similar diagnostic is another useful test. Nickel toxicity should be suspected if there are symptoms such as tiny blisters or reddish rashes where nickel touches the skin (as with eyeglasses or jewelry) or at sites of sweating (such as the palms of the hand, hairline, or feet). In addition to “sensitizing dermatitis,” stubborn symptoms that might be the result of nickel toxicity include allergic asthma, acid reflux, insomnia and snoring.⁵²

Another shortcoming with hair tests is that gold, silver, uranium and other metals usually are not included as part of most laboratories’ standard hair tests. Luckily, the same detoxification programs that round up and remove the usual toxic metal suspects will usually help to eliminate or deal with these others as well.

The biggest problem with hair tests is not the test itself but the fact that far too many people—including doctors and other health practitioners—misread the initial hair tests and take the low levels in the initial readings at face value.

Conventional doctors prefer blood tests to determine metal toxicity. Such tests have little diagnostic value unless they follow recent acute exposure because the body keeps the blood clean at all costs.⁵³ Urine samples aren’t much better unless potentially dangerous systemic, oral or intravenous chelating agents are given, followed by a 24-hour collection. In such tests, mercury or another metal is “provoked” out of the tissues

and organs and attaches itself to the chelating agent, which is then expelled through the urine or feces. As discussed below, this causes a toxic rush into the bloodstream that can result in painful and difficult detoxification symptoms with a possible worsening of overall health—and sometimes even death.

A better urine test to identify metal and environmental toxicity is a porphyrins profile such as the one offered by Metametrix Laboratory. The porphyrin metabolic pathway is responsible for the formation of hemoglobin and other energy-producing compounds, as well as molecules essential for detoxification. Toxic metals and chemicals present in the body interrupt this pathway, producing specific porphyrins, which become elevated in the urine. This test can differentiate specific toxic metal exposure and potential biochemical damage caused by that exposure. The test can help clinicians evaluate the effects of mercury amalgam fillings, the wanted and unwanted effects of chelation therapy and the toxicity of certain pharmaceutical drugs.^{54,55}

For newborns, meconium analysis can detect fetal exposure to lead, mercury, cadmium and other toxic metals, DDT and pesticide exposure as well as alcohol, tobacco use and illicit drug use. Meconium is the greenish mix of bile, amniotic fluid, bile pigments, epithelial cells, mucus, blood and other substances found in the first stool of a newborn. Meconium testing is offered at many hospitals but commonly used only when cocaine or other maternal illegal drug use is suspected.^{56,57}

A DIRT CHEAP SOLUTION

Until we can clean up the planet and our act, we fortunately do have a “dirt cheap,” stop-gap way of coping with metal toxicity. That solution is diatomaceous earth. Dr. Knight has extensively tested a product produced by Perma-Guard that is also available through WisdomWays in Edgewood, Colorado.⁵⁸ Diatomaceous earth comes from fossilized shells of freshwater diatoms and is found in vast deposits all over the earth. Made up of silicone and trace minerals, diatomaceous earth can, according to the scientific literature, absorb methyl mercury, *E. coli*, endotoxins, viruses (including poliovirus), organophosphate pesticide residues, drug residue, and protein, perhaps even the proteinaceous toxins produced by some intestinal infections.^{59,60}

The only caveat is that diatomaceous earth used for human or animal detoxification must be food grade. People and other mammals should never use the coarse, crystalline form of diatomaceous earth sold for use in swimming pool filters or as insecticides, or sources of diatomaceous earth contaminated with toxins like arsenic and the metal toxins. If inhaled, the crystalline form can cause a disabling lung disease called silicosis and upon ingestion might puncture the lining of the alimentary tract. Food-grade diatomaceous earth binds metals and other toxins, gently siphoning or leaching them out of storage areas and passing them innocuously out of the body.⁶¹

Microscopic live cell analyses of blood taken from individuals who have detoxed using food-grade diatomaceous earth for many months display little evidence that the particles make their way intact into the blood. Hair analyses of these individuals display normal or even slightly

low amounts of silica. This evidence, combined with a very low trace and toxic mineral content (usually in parts per million), supports the concept that diatomaceous earth works by removing toxins that poison the immune and regulatory functions, rather than by adding trace minerals that support these processes.⁶²

To detoxify with diatomaceous earth, dissolve less than one teaspoon to one tablespoon for every 100 pounds of body weight in a glass of pure water and drink before bed over a period of months or years. Taken this way, its metal-binding capacity is unlikely to hinder the absorption of needed minerals such as calcium, magnesium and zinc, which we take in from our food at mealtimes or from supplements during the day.

Moderation and patience is advised, as taking more than one tablespoon can create some very uncomfortable side effects. An overeager dentist, for example, took an estimated 12 tablespoons overnight in a foolish attempt to quickly rid his body of years of accumulated mercury. He may have let go of some quicksilver all right, but he also developed a bad case of bowel inflammation that mimicked constipation so completely that he feared his gut was turning into concrete!

Even at low levels of under one teaspoon per day, detoxification may trigger the discomfort known as a “healing crisis.” This discomfort may be nothing more than inflammation caused by a reawakening immune system as it detoxifies and begins to attack previously unaddressed chronic infections and/or stores of toxic metals. Increasing the amount slowly from less than one teaspoon to a rounded tablespoon over a few days or weeks may help to avoid this situation. One does want to remove the toxins as fast as the body wants to release them, however, and as much as two percent dry weight in the diet or about a tablespoon per 100 pounds is appropriate if the body weight is not outrageous. Even so, individuals suffering from perforations of the alimentary tract (such as bleeding ulcers, colitis, leaky gut syndrome and advanced lupus) *always* should exercise caution and use diatomaceous earth only under the care of a doctor or other health practitioner.⁶³

Many health practitioners report good results with other dirties such as bentonite clay and zeolites, as well as assorted mineral toddies, colloidal mineral products, “magnetic” clays and other allegedly miraculous down-and-dirty cure-alls. Typically, these are advertised as offering many benefits without adverse effects. Many may work as advertised. However, anecdotal evidence and our own personal experience indicate that some cause diarrhea and other alimentary tract disturbances. We haven’t come close to testing all of them, but hair mineral analysis tests on people who have regularly taken some of these products have indicated major imbalances of macro and trace minerals and unexpectedly high levels of some toxic metals, especially aluminum. Although presence of the latter might indicate that removal is underway, the other out-of-whack ratios point to a body out of homeostasis and struggling with the detoxification process.

Purity may also be an issue. There are more than 200 types of bentonite clay, most of which have an aluminum content of anywhere from 15 to 75 percent, and some products in the marketplace have been manufactured with harmful, commercial emulsifiers. Zeolites are hydrated aluminosilicate minerals from a family of microporous solids known as

“molecular sieves” that supposedly can selectively sort molecules on the basis of size. More than 150 naturally occurring types exist, most of which are not pure and are contaminated to varying degrees by other minerals, metals and quartz, as well as the aluminum.

Many of these detox products are advertised as having the ability to get inside bodily cells. While patented “nanotechnology” or whatever to accomplish this might sound like a “plus value,” we must ask about untold and as yet unknown effects upon mineral and energy metabolism, such as pulling toxins *into* the cells and body rather than out of them. These concerns may eventually prove unfounded, but for now we are sticking with the proven safety of diatomaceous earth.

The only thing better might be diatomaceous earth combined with inositol as in the product ToxiClenz from WisdomWays.⁶⁴ Yes, inositol is the core of phytate, an antinutrient found in grains, beans and soy, among other plant foods. And, yes, the Weston A. Price Foundation has been very active in warning people about the need to properly soak and prepare these foods in order to inactivate phytate so it will not interfere with absorption of calcium, zinc and other minerals. After all, people in third world countries (who eat plant-based diets out of necessity) as well as people in developed countries (who favor them for alleged health benefits or because of vegetarianism beliefs), often develop serious phytate-induced mineral deficiencies. On the plus side, phytate-containing products such as unleavened breads or coarse porridges have been used in many cultures to detoxify, though usually only on a once per year basis.⁶⁵

Given our toxic world and the toxic loads of those in health crisis, we may need to use this type of product more often, since the hexaphosphate ringed inositol can bind up and help to neutralize the metal toxins, perhaps even helping to transport them to the diatomaceous earth for elimination. To minimize damage and maximize benefit, take care to include optimum levels of minerals through a nourishing traditional diet combined with a program of laboratory testing to determine and monitor appropriate nutritional mineral supplementation.

CHELATION THERAPY; NEITHER NATURAL NOR WISE

Chelation is a process by which toxic metals, such as mercury and lead, are bound to a chelating agent (a chemical that chelates or “grabs on” to them) and then are eliminated from the body. In theory, once the metals are removed, they can no longer exert their toxic effects and the individual’s health improves. In practice, the results of oral, intravenous or other routes of chelation with agents such as EDTA (ethylene diamine tetraacetic acid), DMSA (dimercaprosuccinic acid, also known as succimer), DMPS (dimercaptopropanesulfonic acid) and penicillamine are far from safe.

The body in its wisdom sequesters toxic metals as far away from vital functions as possible. It is therefore not wise to “provoke” the body to rapidly dump mercury, lead and other toxic metals out of their hidey holes deep within the cells and tissues. As the metals enter the blood stream to be passed out of the body in urine or bile, they can damage brain and nervous tissue, depress immunity and disrupt other needed bodily functions.¹

There’s nothing natural about intravenous chelating agents. They are drugs, drugs that were initially developed by and for the military to treat acute mercury, lead and other poisonings of World War II army and navy personnel.^{2,3} Their use for the removal of chronic levels of toxic metals is off label and controversial.

Although some physicians and parents report stunning success, chelation treatments are risky, especially to autistic and other highly vulnerable children and to extremely toxic adults. Following chelation therapy, many autistic children have shown seriously weakened immune systems, extreme fatigue, bowel disturbances such as diarrhea and flatulence, and a marked worsening of gut flora.^{4,5}

Some patients show improvement in autistic symptoms initially, but regress soon after, as chelation therapy does nothing to support or heal the body’s own detoxification pathways. Indeed, chelation drugs have the potential to radically alter the homeostasis of all our biochemical pathways that involve sulfur chemistry. DMSA is an analogue of many intermediates in the Krebs or citric acid cycle, a central pathway for the metabolism of fats, carbohydrates, and amino acids. Penicillamine is structurally similar to vitaletheine, cysteine, cystamine and beta-aletheine, all of which have vital roles in immune and other functions. DMPS is an analogue of dihydrolipoic acid, a powerful antioxidant vital to mitochondrial health, and to fat metabolism and other cellular processes.

Chelation therapy can lead to hypocalcemia, a severe lowering of blood calcium levels with disastrous effects upon humoral immunity.⁶ We also have reports of comas and blood cell rupturing due to chelation therapy. The FDA now requires that the chelator EDTA include calcium salts to prevent the death of humoral immunity.⁷

Several deaths have occurred because of a medication error involving a “look-alike, sound-alike substitution” drug. Instead of the chelating agent edetate disodium calcium (CaNa₂EDTA), which is used for treating lead or other heavy metal poisoning, the doctors used edetate disodium (Na₂EDTA), intended only for extreme and rare medical emergencies involving life-threatening excesses of calcium.^{8,9}

Even when chelation is done properly, doctors need to monitor their patients’ kidney and liver health and blood composition. Patients may show high levels of transaminases, enzymes in the blood that indicate liver damage or neutropenia and thrombocytopenia from bone marrow suppression. Finally, chelation is contraindicated in people with kidney problems.¹⁰⁻¹² As with any drug therapy, some patients are more sensitive and vulnerable to damage than others.

Aggressive chelation can also seriously deplete needed metals such as zinc, magnesium, calcium, selenium, manganese, chromium, vanadium and molybdenum. As a result, chelation protocols generally recommend an extensive supplement regimen during the course of treatment.¹³

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A COMPLETE NUTRITIONAL THERAPY PROGRAM

To be truly effective, a detoxification program using diatomaceous earth must be part of a complete nutritional therapy program that includes:

- ♦ Removal of toxin sources from food, air, water and the environment as much as possible;
- ♦ A program to remove candida infections and other parasites;
- ♦ Enhancement of cellular energy production through optimum diet and supplements;
- ♦ Nourishment of the immune system;
- ♦ Support of eliminative organs, including skin, liver, kidneys, and bowels.

SOME CAUTIONS

Appropriate treatment regimens vary significantly from person to person, depending upon multiple dietary and lifestyle factors, specific medical conditions and the circumstances of exposure. One-size-fits-all regimens found in popular books and on internet sites may or may not work. Worse, they may pose dangers. It's far beyond the scope of this article to discuss the pros and cons of the myriad supplements and herbs singly and in combination that have been proposed as metal detoxifiers, but here are two examples of potential hazardous "natural remedies" that need attention.

First, megadoses of vitamin C can be counterproductive, though appropriate amounts of a natural vitamin C replete with its complementary bioflavonoid components are very much needed for effective detoxification.


Secondly, an unexpectedly dangerous compound to avoid is N-acetylcysteine (NAC), a high-priced product heavily recommended by alternative medical doctors and other health practitioners. NAC is a form of cysteine often recommended as a more powerful form of the much-needed amino acid L-cysteine or in lieu of glutathione, an antioxidant that is rarely effective in supplement form.⁶⁶ Although dozens of journal articles support its short-term use as immunity booster and detoxifier, evidence is mounting of potential long-term harm. The NAC form of cysteine conceivably can poison vitalethine, a vital component needed to activate humoral immunity.⁶⁷⁻⁶⁹

In brief, we cannot emphasize enough the importance of individualized treatment regimens based on laboratory assessment. While a Weston A. Price style diet plus diatomaceous earth is a safe and effective maintenance regimen for healthy people, those with major health problems or even minor challenges are best served by a custom tailored and comprehensive regimen.

MAKING WISE POLITICIANS

In conclusion, we propose to treat the cause and not just the symptoms of heavy metal toxicity. To wit, this election year, we vote for detoxification with diatomaceous earth for politicians as well as all those in elective and appointed offices, including judges, police officers and FDA officials.

If candidates were required by law to be free of mercury, cadmium, lead and other metal toxicities that affect their mental capacities, we could have more confidence in their leadership and appropriate use of power. Sanity regarding environmental and dietary exposure to toxic metals would, could and should become an inalienable right.

At the very least, it would be great to have an election where candidates avow to get the "dirt into" themselves and not dish "dirt on" their opponents! 

ABOUT THE AUTHORS

Kaayla T. Daniel, PhD, CCN, is a nutritionist in private practice based in Albuquerque, New Mexico. She has worked extensively with clients from all over the country on heavy metal detoxification, which she has found to be a major contributor to most health challenges. She is the author of The Whole Soy Story: The Dark Side of America's Favorite Health Food. She can be reached at wholenutritionist@earthlink.net and at 505-266-3252.

Galen D. Knight, PhD, is a biochemist who has carried out pioneering research on the role of vitalethine in humoral immunity and cancer development. To learn more about his work, visit his website www.vitaletherapeutics.com, E-mail him at galenvtp@highfiber.org or call 505-884-8644.

On February 19, 2008, Dr. Daniel and Dr Knight joined Sally Fallon, Mary Enig PhD, and Kilmer McCully MD, in submitting a 65-page petition to the FDA in which we presented massive evidence as to why this "consumer protection agency" should retract its soy-prevents heart disease health claim.

Both authors will speak at Wise Traditions 2008 in San Francisco.

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Agave: Nectar of the Gods?

By Rami Nagel

Agave nectar was first introduced to the U.S. market in Anaheim, California, at the 1995 Natural Products Expo West, the nation's largest natural, organic and healthy products trade show. Marketeers have touted this tempting sweetener from Mexico for its low glycemic index and it soon became a favorite found in raw food circles and among enthusiasts of healthier foods. Agave nectar is often an ingredient in newer "health foods" including energy bars and organic ice creams. Advertisements for agave stress such attractive features as acceptability for vegan and raw food diets, grown in nutrient-rich soils, all natural, 100 percent organic, fair traded, sustainably harvested, and even kosher.

In researching agave nectar, I have found that many of these advertised claims are true, but even so, the fundamental question remains, "Is it good for us to eat?" Although possibly higher in minerals than most refined sweeteners, it is not likely healthy for regular use due to its high fructose level.

A PLANT OF MANY USES

Agave nectar is a sweetener produced from the agave plant. There are hundreds of species of agave, which is not a cactus as commonly believed, but a succulent that is more closely related to amaryllis and other lilies. Each species of agave has unique characteristics that make it suitable for different uses: food, clothing, fiber, beverage, construction, and so on.

The agave plant has a large root base with long pointy projections coming out of it. Each species of agave plant looks different and has its own features. A mature agave has leaves 5 to 8 feet tall, and is 7 to 12 feet in diameter.

AGAVE NECTAR

Commercial agave nectar is produced primarily by two companies, Nekutli SA de CV (distributed by the Colibree Company of Aspen, Colorado) and IIDEA (the latter also produces tequila). Each of these companies then sells its bulk product for repackaging under a variety of different brand names. Nekutli's most familiar brand of agave nectar is sold as "Madhava Agave Nectar 100% Natural Sweetener" and IIDEA's most popular brand is "Wholesome Sweeteners Organic Blue Agave Nectar."

The nutrient profile below shows what Nekutli and IIDEA agave nectars provide in terms of chemical composition. I have included analy-

ses from two comparable sweeteners, unheated honey and maple syrup.

The difference between Nekutli's and IIDEA's sugar profile reflects the fact that they are from two different plants and are manufactured in different ways. Note that accusations have been made that some companies add filler sugars to their agave nectar. While this may indeed happen, I could neither confirm nor deny this fact for any particular brand.

IIDEA'S AGAVE

IIDEA's agave is extracted from the blue agave plant when the plant is approximately eight years of age. What follows is not an exact factory tour of how IIDEA's agave is manufactured, but rather a general overview.



The giant heart of the plant, which can weigh from 70 to 100 pounds, is the goal of the collection process. Once collected, the heart, which looks like an enormous pineapple, is shredded, pulped and subjected to high pressure steam in order to make it easier to extract the juice. The juice is then filtered to create light and dark varieties. Next, the

extracted and filtered juice is heated to create thermic hydrolysis, which breaks down the carbohydrates into sugars, very much like boiling maple sap to get maple syrup. For the raw agave produced by IIDEA, the temperature is controlled for this stage to remain below 118 degrees F.

There are hundreds of species of agave, which is not a cactus as commonly believed, but a succulent that is more closely related to amaryllis and other lilies.

	NEKUTLI	IIDEA PREMIUM	RAW & UNHEATED HONEY	CONVENTIONAL MAPLE SYRUP
Total Carbohydrates %	97.4 - 99.8%	Min. 98%	79.5%	67%
Water	trace	trace	17%	32%
Fructose	70.5 - 74.5%	78 – 85 %	38%	0.8%
Dextrose (Glucose)	20.5 - 26.5%	Max. 16%	31%	2.3%
Mannitol	0.0%	Max. 1.5%	n/a	n/a
Sucrose	0.0%	Max. 3.0%	1.3%	56.3%
	0.0%	Max. 2.0%	n/a	n/a

In order to
sell agave
sweeteners
to a wider
market,
commercial
manufacturers
decided to
create a more
delicate
product with
a more
palatable
flavor and this
is the agave
nectar we
see on store
shelves.

NEKUTLI'S AGAVE

Nekutli's agave is extracted from the salmiana agave plant. When the plant is seven or eight years old, it produces a long flower stem called a *quiotte*. Soon after the *quiotte* first appears, it is removed, leaving a hole in the center of the plant. The plant tries to heal this wound, and *aguamiel* collects in the hole. *Agua* means water, and *miel*, honey. This *aguamiel* is the true nectar of the agave plant. It is not the sap of the leaves, but the juice the plant stored to prepare to grow its *quiotte*.

The *aguamiel* can be collected twice per day, each plant producing 6-8 quarts of *aguamiel* daily. This production continues for approximately eight months and can at times last for several years. The *aguamiel* is carefully removed by indigenous farmers using a gourd and a suction device. The *aguamiel* is placed in an evaporator to remove moisture. Here is where raw agave nectar is produced. If the vacuum evaporator is controlled to stay below 115° F then it is called raw nectar, and if it is not controlled, evaporation proceeds more quickly, and this creates regular, not raw, agave.

The resulting syrup is next hydrolized using enzymes. So rather than using a heat process, Nekutli uses an enzyme process with organic enzymes to convert the carbohydrates into sugars. Finally the agave is filtered, which results in a light syrup.

INDIGENOUS AGAVE SYRUP

Some indigenous peoples of Mexico make a sweetener with the *aguamiel*, called in Spanish *miel de agave*, or *miel de maguey*. The production of this sweetener is quite simple: pour the agave nectar into some type of pot and then boil it. The result is a very dark, thick liquid with a characteristic smell and strong flavor. Even to this day this dark syrup liquid is used to treat several illnesses.

The strong syrup has a high concentration of mineral salts such as calcium, magnesium, sodium and potassium, as well as amino acids. It has been consumed since prehispanic times. The main difference between traditional agave syrup and Nekutli agave syrup is that Nekutli vacuum evaporates their product at a lower temperature and then uses enzymes rather than boiling to

hydrolyze the sugars. This process results in the removal of many of the mineral salts and amino acids.

While I have heard mention of a company selling what appeared to be traditional agave syrup, I could not get in contact with them. When I tried to ascertain why nobody was selling traditional agave syrup, I discovered that the flavor is too strong to be palatable for most people. That "most people" surely does not include many of the members of the WAPF, who relish their potent cheeses and fermented "smelly" foods of various sorts!

In order to sell agave sweeteners to a wider market, commercial manufacturers decided to create a more delicate product with a more palatable flavor and this is the agave nectar we see on store shelves.

BLUE AGAVE AND TEQUILA

The story goes that IIDEA, originally a tequila manufacturer, one day approached the University of Guadalajara to find out what to do with all of their extra agave plants from a year of high agave yield. The University suggested and devised a way to make a sweetener.

When the Spaniards came to the New World around 1535 they brought with them a passion for brandy. When their supplies ran out they had to find a new alcoholic beverage to replace their lost brandy. The Spaniards found that by distilling the juice of the plant now known as the blue agave plant they could produce a potent alcoholic beverage which over time has evolved into what we now call tequila.

AGAVE OBSERVATIONS

Using the term "agave nectar" for a sweetened syrup produced from the *aguamiel* of an agave plant, or from the juice of the heart of the blue agave plant, seems like mislabeling to me. Some agave sellers properly label their nectar as syrup. And that is what this really is, a syrup produced from the agave plant; it is not nectar. To me, nectar would be the *aguamiel* or some unadulterated version of it.

The traditional sweetener and healing remedy made from boiled nectar of agave is called in English a syrup. To be clear, when you are buying agave nectar, you are not buying the nectar, but

a syrup made from the agave's nectar.

The agave made by Nektli seems far closer to tradition than IIDEA's agave made from blue agave that has been selectively bred, for perhaps centuries, to produce large plants with higher levels of inulin (linked sugars). Enhanced inulin and sugar levels make the blue agave a better plant for tequila production.

Meanwhile, Nektli takes the original *aguamiel* and processes it to remove strong flavors and odors. But agave syrup made by Nektli is not the traditional sweetener either, as it uses modern vacuum evaporation techniques, enzymes rather than heat, and a filtration system to remove many of the minerals and thereby create its light flavor.

I purchased the raw varieties of Nektli and IIDEA's agave nectars and sampled them, both plain, and also in my daily raw milk smoothie with raw eggs. In texture and form, both nectars were very similar to honey. They had a sweet flavor; the difference in flavor between the agave syrups and honey was noticeable but not extreme.

In a crude science experiment, I placed petri dishes with the agave syrups, and petri dishes with two brands of unheated honey out for the bugs to eat. From a visual perspective one can hardly tell the difference between the agave syrups and the honeys. The ants preferred the agave syrups over the honeys, especially the dark raw agave manufactured by IIDEA.

During the taste test, and through observing myself afterwards, I had a hard time finding fault with the agave sweeteners. While agave syrup is not a product I will continue to use, the organic varieties I tried were clearly not worse than, say, organic evaporated cane sugar found in many organically labeled products. Further detailed testing would be required to ascertain how good or bad they truly are. As a side note, both of these agave syrups seem to come from agave grown in pristine lands with rich soils.

The physical properties of agave make it ideal for manufacturing—perhaps that was the original intent for developing this processed sweetener. Agave syrup blends well with food, has a bland and mild taste, and does not compete with other flavors.

However a major concern is the high level

of free fructose in agave syrups—much higher than honey and maple syrup. Given what we now know about the deleterious effects of fructose compared to sucrose, honey and maple syrup would seem to be better choices than agave for home cooking. Questions also remain about the end products of rapid enzymatic hydrolysis.

NECTAR OF THE GODS

Two thousand years or more ago, in the central highlands of Mexico, the Native Americans consumed a sacred drink made from a variety of agave, such as the agave *salmiana*, called *pulque* (pronounced pool-kay). *Pulque* is a thick, whitish drink of 3-4 percent alcohol made via a brief fermentation of the *aguamiel*.

Traditionally *pulque* was used by the Aztecs for special celebrations, served as a ritual intoxicant for priests to increase their enthusiasm, and as a medicinal drink. *Pulque* was also considered a nutrient-rich drink reserved for pregnant and nursing women; its nutrients decrease the risk for anemia. A mildly alcoholic drink that is good for pregnancy and breastfeeding definitely goes against modern conventional beliefs. (To be clear, I am not suggesting pregnant women drink alcohol such as wine or beer.) This shows that the form and preparation of alcoholic beverages, as well as the concentration of the alcohol, dramatically affect the beverage's positive or negative effects on the body. *Pulque* provides thiamine, riboflavin, niacin and pantothenic acid, as well as enzymes and beneficial bacteria from the natural fermentation process.

The first stage of *pulque* production is the same as the first stage for producing Nektli's agave syrup. During maturity of the plant the giant flowering stalk is cut before it grows, and each day a natural bowl in the base of the plant fills with *aguamiel*. The *aguamiel* was originally ceremonially collected and carefully fermented without any additional processing. The native enzymes and bacteria in the *aguamiel* naturally and automatically turn the *aguamiel* into *pulque*. In 36-48 hours, the famous drink is finished. The liquid is said to be very sour and smelly, similar to the taste of fermented sorghum beer from Africa—definitely an acquired taste!

Still, just hearing about this mythical and revered drink, filled with life-giving nutrients,

Traditionally *pulque* was used by the Aztecs for special celebrations, served as a ritual intoxicant for priests to increase their enthusiasm, and as a medicinal drink.

The substance sold as agave nectar on today's market shelves is not the true nectar, neither is it the traditional syrup.

which brings about a heavenly intoxication while also possessing medicinal and aphrodisiac qualities, tempts me greatly. Unfortunately, traditionally made *pulque* is difficult to find even in Mexico, and the location of those rare sources is a closely guarded secret. Due to the rapid natural fermentation process, storing the *pulque* for transportation while keeping its natural probiotics intact is a difficult task that no one seems to have successfully accomplished.

THE LOST NECTAR

Weston Price frequently commented that with the coming of the modern white man and his depleted foods of modern commerce, also came a plague that destroyed indigenous civilizations across the planet. This plague not only deteriorated the flesh and bones of all people consumed by it, but their hearts and minds as well.


Refined agave syrup, labeled as agave nectar, is an example of this process, wherein goodness and harmony are lost. Here, *pulque*, a lightly alcoholic life-giving food, considered to be the nectar of the gods due to its intoxicating effects, is replaced with poor facsimiles of tequila.

And traditional agave syrup, made by boiling the *aguamiel*, which today is still used for traditional healing methods, is replaced with a more refined syrup, that has lost at least some of its minerals, and is no longer produced by original methods. These modern interpretations

of ancient whole foods do not offer the same life-giving properties, nutrients, and good spirits of their wholesome ancestors.

It is a sad reflection today that even in the central highlands of Mexico, the use of *pulque* is in rapid decline, no longer available in its genuine form for today's people who deserve this divine nectar in its carefully harvested, pure, and unrefined state.

The substance sold as agave nectar on today's market shelves is not the true nectar, neither is it the traditional syrup.

I feel the calling and desire within me to return to the old ways. I can imagine a time and a place where people trust in nature's principles to guide their food creations. In such a time we will not require research articles to figure out what a food really is behind its marketing hype and product labeling. I look toward that time when we rely on nature's principles and the heritage of wise traditions to educate us about the most vibrant and rich ways to live. 

Special thanks to those who helped with this article: Sabra Van Dolsen of Colibree, Craig Gerbore of Madhava and Andrew Rhodes of SunFood Nutrition.

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XYLITOL: IS IT BENEFICIAL, OR EVEN SAFE?

Heralded as an ally in the battle against tooth decay and diabetes, xylitol is another sweetener to enter the market with a great deal of hype. Xylitol is a five-carbon sugar alcohol found in some fruits and vegetables and produced in small amounts by the human body. Because mouth bacteria cannot ferment sugar alcohols, xylitol is said to prevent cavities; and because the body metabolizes it primarily through the liver rather than the pancreas,¹ it is said to be good for diabetics in limited amounts (no more than 60 grams per day).

Xylitol is less sweet than sugar and produces a noticeable cooling sensation in the mouth when highly concentrated, as in "sugar-free" candy and chewing gum. It is often added to foods sweetened with aspartame, to mask the bitter taste. And because xylitol contains fewer calories than sugar, products containing it can carry weight loss claims.

HOW IS XYLITOL MADE?

Originally made from birch bark, and hence associated with the very natural, nutritious and traditional birch syrup (similar to maple syrup), xylitol is anything but a natural product. The typical manufacturing process goes like this:

1. Obtain some source material containing xylan. One commonly used source is corn cobs imported from China. Hardwood and the waste from cotton ginning are other sources.

2. The xylan needs to be broken down, either through a chemical process called acid hydrolyzing or through microbial fermentation. (Genetically engineered bacteria have been proposed for this step.) The results of this process are xylose and acetic acid.
3. The concentrated acetic acid, described as “very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. . . Hazardous in case of skin contact (corrosive, permeator), of eye contact (corrosive),” must be removed.
4. Next the hydrolyzing acid and organic residues must be removed, which is done by heating the mixture and evaporating it.
5. The resulting syrup is now free of acetic acid, hydrolyzing acid, and other residues.
6. The syrup is crystallized by stirring ethanol into it.
7. The crystalline xylitol is now separated in a centrifuge. The ethanol is separated from the sorbitol remaining in solution.
8. Voilà! You have xylitol.

XYLITOL’S DUBIOUS HEALTH CLAIMS

Since xylitol is an industrial product, it pays to be dubious about the industry’s health claims for it. First among these is the claim that xylitol prevents cavities. Indeed, many studies can be cited to support such a claim. But not all. The results of a recent two-year trial found no difference in cavities between those who chewed xylitol-containing gum and those who did not.² In an earlier study, researchers concluded that “Overall, consumption of xylitol-containing snacks and candy did not reduce *S. mutans* levels.”³

As for the claim that xylitol is good for diabetics, the fact that this sweetener is not completely absorbed comes at a cost: bloating, diarrhea and flatulence. In a study performed on 18 diabetic children who consumed a dose of 30 grams of xylitol per day, researchers found a significant elevation of the uric acid concentration.⁴ And since 80 percent of xylitol is metabolized through the liver, a danger to liver function similar to that of fructose is a distinct possibility.

The official website for xylitol, xylitol.org, states, “In the amounts needed to prevent tooth decay (less than 15 grams per day), xylitol is safe for everyone.” Fifteen grams of xylitol is about 0.5 ounces. What about doses over 15 grams?

In a long term toxicology study on rats researchers found that xylitol caused a significant increase in the incidence of adrenal medullary hyperplasia in male and female rats in all dose levels tested (5%, 10% and 20%).⁵ That means it caused abnormal cell growth in the adrenal glands. In one higher-dose study in which mice consumed 20 percent of their diet as xylitol, there was a significant increase in the mortality of the males as compared to those consuming sucrose.⁶ A major study in dogs found an increase in liver weight associated with xylitol use.⁷

CONCLUSIONS ABOUT XYLITOL

Xylitol’s own promotional material says it is not safe for everyone to use. Since children are smaller and less developed than adults, they will obviously be much more sensitive to xylitol’s effects. There are no safety data or tests to indicate a safe dosage for children. And foods containing xylitol may also contain additional sweeteners that are undeniably harmful, such as aspartame.

As for claims that xylitol can prevent tooth decay, I can only say, “Buyer beware!” Such claims are based on the faulty theory that bacteria cause tooth decay. We know from the work of Weston Price that tooth decay is a problem of nutrient deficiencies—the bacteria are just there cleaning up dead tissue.

Finally, and most importantly, this industrial product is just not necessary. Nature has provided us with many wholesome sweeteners that can be used in moderation without adverse effects in the context of a diet of nutrient-dense traditional foods.

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Farm and Ranch

AGRIBUSINESS AND THE FALL OF ROME:
ANCIENT WISDOM FOR MODERN NATIONS
By John Moody

The horses' feet clop upon the stone road as the carriage rocks along, the sound of conversation echoing from its confines out into the quiet countryside. It is 140 BC. The Roman nation is nearing the apex of its affluence and power. Death, discouragement and defeat during a brutal series of wars are now a distant memory. Conquest has brought wealth, luxury and ease to the once hard-pressed Roman people, especially the politicians and businessmen, transforming the nation from an agrarian to a commercial society.

Two brothers, Tiberius and Gaius Gracchus, are traveling together through the Roman countryside on their way to the capital, talking and taking in the mild Italian spring. They see many things as they travel along the Via Apia—great Roman edifices and aqueducts, passing groups of Roman soldiers patrolling the roads, couriers carrying messages to and from distant cities, and rolling expanses of Italian land, fertile and inviting... yet seemingly empty of Romans. Derelict homes dot the landscape, punctuated by the occasional massive mansion surrounded by far less lavish, barracks-style buildings, housing for the slave gangs captured in wars with Spain, Africa and other nations. The slaves mill about the estates, planting and picking, but few Roman citizens are to be found. At most, Tiberius and Gaius glimpse an occasional Roman supervisor, a servant of some senator or patrician who has taken up residence and ownership of the vast Roman countryside. A dark quiet falls upon their chariot ride towards Rome.

When Tiberius and Gaius reach the capital, they find the missing Romans. Hundreds upon hundreds of Romans—landless, purposeless and unemployed. As they make their way through the city, the brothers see their fellow citizens hanging around taverns and bars, drinking and gambling,

waiting dejectedly in the government-provided breadlines, or picking fights with Roman soldiers in the streets. The once productive and self-sufficient farmers or workers in small local communities are now displaced and draining the resources and vitality out of the cities and country.

What they witness concerns and disturbs them. Small farmers are the backbone of the Roman nation, without which it stands little chance of survival as a free republic. In peace and war, more than any other factor, their love of land and country has been the determining factor in the nation's survival. What then is driving them from their homes and farms, from their vocations and communities?¹

ANCIENT AND MODERN NATIONS MEET

The similarities between Rome right before its fall into dictatorship and modern America are striking and disturbing—debt, political gridlock, breakdown of the family, inability to deal with external and internal problems—to mention just a few. For us, the particular issue at hand is how the rise of ancient agribusiness, known as *latifundia*, from *latus*, “spacious,” and *fundus*, “farm or estate,” and the loss of the yeoman (that is, small) farmer contributed to the nation's decline into internal disarray and eventual dictatorship.

For centuries, the yeoman farmers served as the backbone of the Roman economy, morality and military. They sustained the nation's people with food through hard work and wise husbandry, steadied the populace with their virtue and morals, and supplied the army with distinguished and dedicated soldiers who kept the nation secure from internal and external threats.

Following the wars with Carthage and the subsequent wealth it brought to certain Romans, more and more of Rome's land was turned into

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Louisville,
Kentucky.

these *latifundia*, the forerunner in many ways to modern, industrial farms both here and abroad. Wealthy senators or their patrician friends owned these large farms, which were worked by slave gangs. The owners often exerted considerable power in and over the Roman political system, manipulating and at times even paralyzing the senate and government from dealing with the nation's problems. The small yeoman farms and their workers could not compete against the slave gangs of the *latifundia* and were forced to abandon their homes and property to seek employment in the cities, decimating the small, rural communities that once filled the Italian countryside.

The loss of the small farms resulted in more and more people flowing into the already crowded cities. These rootless newcomers helped drive up unemployment, crime, vice and the need for government handouts, all of which further strained the nation's resources and finances during a time of mounting external and economic pressures. As people left the countryside, more and more land became available for the *latifundia* to acquire creating a terrible cycle of low commodity prices forcing population displacement, followed by urban overcrowding and decay, and finally to even greater burdens on the Roman cities and government. Rome went from a nation of many small, independent, and self-sufficient landowners to a nation controlled by a few rich and powerful "landlords," with large portions of the population trapped in government-supported poverty or *latifundia* slavery.

Two young men, the Gracchi brothers, sought to check the growth of the *latifundia* and restore the yeoman farmers. The older brother, Tiberius Gracchus, became a tribune of the plebs in 133 BC (see below).² Circumventing the sen-

ate, he brought directly to the people legislation to restore public lands—lands that were often illegally owned or occupied by senators and wealthy businessmen—to the poor, landless Roman citizens. While the people overwhelmingly supported and passed his measure, the senate blocked the financing needed to carry out the mandates of the bill. Tiberius again bypassed the senate, funneling the bequest of the king of Pergamum to provide the needed financing for his reforms. When he sought reelection as tribune his adversaries, under the pretext that he was seeking to become king, incited a mob to kill him and many of his supporters.

Gaius Gracchus was not deterred by his brother's demise. However, he decided that only a dictator could remedy the political gridlock and powerful special interests that now controlled the Roman government. Having learned from his brother's mistakes, he first sought to gain broader popular support among Rome's other classes for his reforms, to counteract the strength of the senate and special interests, by securing land for small farmers, courting the special interests with favorable laws, providing food and clothing for the poor and offering citizenship to Rome's allies.

His efforts were not enough and he found himself a tool of the very groups he had hoped to bend to his own purposes. After Gaius failed to gain reelection to the office of tribune for a third term, and thus finding himself at the mercy of his numerous enemies, some of his followers began to riot. The Roman senate authorized the consul Opimius to do whatever was needed to quell the disturbance. Opimius mobilized the Roman army to put down the mob, killing thousands of Gaius' supporters. Gaius himself narrowly escaped and was chased through the

The small yeoman farms and their workers could not compete against the slave gangs of the *latifundia* and were forced to abandon their homes and lands to seek employment in the cities, decimating the small, rural communities that once filled the Italian countryside.

THE OFFICE OF TRIBUNE

The office of tribune was established to protect the rights of the plebeians against the patricians and thus to provide a check against the powers of the primarily patrician Roman senate. Ten tribunes were elected each year and they were sacrosanct (that is, protected from harm) during their term. By custom, they were only allowed to serve as tribune for a single one year-term.

The tribune occupied a potentially powerful role in the Roman political system. For instance, through the power of veto, a tribune could bring the entire government to a complete halt and override the decision of any other magistrate. He could lay legislation directly before the people, bypassing the senate. Unfortunately, few tribunes during the waning of the republic used their power to protect the liberty of the people, often using the office instead as a mere stepping-stone to greater power, influence and wealth on their way up the *cursus honorum*, the Roman political ladder.

Our industrial
agricultural
practices have
contributed
to the obesity
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developing
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city by his enemies. He eventually reached the Grove of the Furies, where he was killed by his servant, beheaded by Septimuleius, and his body was subsequently thrown into the Tiber River to join his brother's.³

Within one hundred years of the deaths of the Gracchi brothers, the Roman Republic would become the Roman Empire under Octavian Augustus Caesar and the people's ability to govern themselves would be irrevocably lost. The political gridlock fueled by the wealthy and powerful special interests coupled with the apathy of the general population would create an open door for a dictator—in the name of the people and the common good—to gain complete control over the whole nation.

TWO THOUSAND YEARS LATER

America was a nation built upon and around small farming communities, though not without some debate among the founders. After the industrial revolution and World War II, small American farms found themselves in an all too Roman-like situation, but only far worse. Over the next sixty years, everything from the slave

labor wages and working conditions of industrial farms and factories to overseas imports from places like China, Mexico, and elsewhere, (where rules, regulations and requirements for fair wages, decent working conditions and pollution are minimal to non-existent), would drive out the small, local, American farms. Moreover, agribusiness had evolved, moving beyond mere slave labor to a vast array of chemical and biological weapons and expensive but powerful fossil fuel-guzzling machines, furthering their competitive advantages against the small farmer. A government policy of "get big or get out" would help galvanize a nation seemingly bent on the loss and destruction of its lifeblood under the guise of improvement and progress.

Today, powerful and well-funded agribusiness uses its political clout to manipulate politicians and public perception, all while seeking greater power over the global food system. Industrial farming practices, where the true costs are externalized on uninformed and ignorant consumers, give the appearance of low prices. none of the real costs—polluted land, poisoned water, air barely breathable, horrifically abused

THE WISDOM OF THOMAS JEFFERSON

Thomas Jefferson, third president of the United States, was a staunch defender of small farmers, broad based democracy, agrarianism, and limited government in his debates with more industrial minded, aristocratic, bureaucratic men, such as Alexander Hamilton. His words, penned hundreds of years ago, are even more pertinent and poignant today.

"Agriculture... is our wisest pursuit, because it will in the end contribute most to real wealth, good morals and happiness."
Thomas Jefferson to George Washington, 1787. ME 6:277

"Cultivators of the earth are the most valuable citizens. They are the most vigorous, the most independent, the most virtuous, and they are tied to their country and wedded to its liberty and interests by the most lasting bonds. As long, therefore, as they can find employment in this line, I would not convert them into mariners, artisans, or anything else."
Thomas Jefferson to John Jay, 1785. ME 5:94, Papers 8:426

"The United States... will be more virtuous, more free and more happy employed in agriculture than as carriers or manufacturers. It is a truth, and a precious one for them, if they could be persuaded of it."
Thomas Jefferson to M. de Warville, 1786. ME 5:402

"The way to have good and safe government is not to trust it all to one, but to divide it among the many, distributing to everyone exactly the functions in which he is competent. . . To let the National Government be entrusted with the defense of the nation, and its foreign and federal relations . . . The State Governments with the Civil Rights, Laws, Police and administration of what concerns the State generally. . . The Counties with the local concerns, and each ward direct the interests within itself. It is by dividing and subdividing these Republics from the great national one down through all its subordinations until it ends in the administration of everyman's farm by himself, by placing under everyone what his own eye may superintend, that all will be done for the best."

Thomas Jefferson to Joseph C. Cabell, February 2, 1816

animals, the scourge of modern diseases and physical degeneration—appear on agribusiness accounting ledgers.

Migrant or illegal workers have replaced the Roman slave gangs with little improvement in compensation or working conditions. CAFOs, vast monocultures of genetically modified corn and soy, and a host of other abominable farming and food production practices have replaced the old Roman slave barracks and store houses. Even worse, the companies that employ such practices are sometimes able to secure immunity from the most basic of environmental laws and traditional taxes in the name of economic development and progress. How such atrocities against planet and people can be called development and progress boggles the mind.


We now find our nation's economy in disarray, our cities riddled with crime and disease, while our countryside has been abandoned to either neglect or abuse by chemical and machine intensive monoculture farms, concentration camp-like confinement farming facilities, or wealthy resort-like castles, where tens to hundreds of acres of Roundup-manicured grass are mowed rather than mowed year after year, wasting valuable agricultural space and fossil fuels for the sake of a select few. World hunger skyrockets in the face of rising commodity prices fueled by an economic system hooked on grain and gas like a drug addict on crack. But our industrial agricultural appetites have begun to catch up with us.

Our industrial agricultural practices have contributed to the obesity and modern illnesses of the developed nations and to the starvation and oppression of the developing nations.⁴ The planet and its people are the victims of this vile process, while purported solutions that benefit only the problem makers—agribusiness and its sinister cohorts of GMOs, pesticides, herbicides, fungicides, NAIS and other “food safety” regulations and measures that militate against small farmers and wholesome and healthy products like real milk—are pushed through, often without the knowledge or consent of the nation's people.⁵

Agribusiness is a symptom of a sick and sickly society. It is like a chronic infection or cancer that must be dealt with before a person can ever hope to return to vibrant health. It is

now time to deal with the problem here in America and abroad and it begins, not with a call for dictatorship or radical social upheaval and revolt, but with each of us buying locally, helping pass legislation that benefits and protects our nation's small farmers, and educating others to do the same.

When we encourage people to buy local and regional real foods and grass based animal products raised by real people who receive just wages in exchange for their work and stewardship of the land, we are not only encouraging them to protect and contribute to their own health and the vibrant health of their children, we are encouraging them to protect and contribute to the health of our nation and the health of the entire world. We are asking them to take tangible, sustainable steps to reduce poverty, pollution, economic injustice and world hunger. We are asking them to help heal some of the sickness of our society. We don't need a dictator to undo the damaging effects of agribusiness in our nation and world. We do need tens of thousands of average citizens like the Gracchi, citizens willing to make sacrifices for the sake of our nation's small farmers and others.⁶

Personal, family, community and national health start with our decision to buy local and put nutrient-dense real food on our dinner plates. Let each of us choose wisely and encourage others to do the same. 

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1. The above introduction is a fictional story, yet rooted in the general historical situation and circumstances of the Roman nation in the 150's-120's BC, created to help the reader gain a general feel for the characters and context of the article as a whole.
2. It is important to note that patrician and plebeian did not necessarily mean rich and poor, powerful and powerless, though in general the plebeians were the lower, poorer classes while the patricians were the upper, wealthier classes in Roman society. Some plebeian families enjoyed great wealth and influence, while some patrician families over time fell into poverty and obscurity.
3. For this material and much of the historical material throughout this article, I am indebted to Dr. Rufus Fears and Dr. Bob Luginbill. The historical knowledge was their gift to others and me; the synthesis of that knowledge is my gift to them and others.
4. Dr. Fears' general summary of an ancient principle, which still applies to America, is that “A balanced constitution and civic virtue would bring with it success (empire) which would bring wealth and contact with foreigners, and undermine civic virtue, the foundation of liberty,” *Famous Romans, The Great Courses*. The Teaching Company, 2001.
5. For a researcher who shares this same general viewpoint, see Raj Patel, *Stuffed and Starved: The Hidden Battle for the World Food System*.
6. For more general information related to industrial agriculture, see Richard Manning's book, *Going Against the Grain* and “The Oil We Eat,” *Harper's Magazine*. Accessed April 21st, 2008 <http://www.harpers.org/archive/2004/02/0079915>.

IN MEMORIAM

We are sorry to note the passing of Professor H. Leon Abrams, MA, EDS who died on January 4, 2008 at age 82. Professor Abrams was Associate Professor of Anthropology and Sociology at East Georgia College, specializing in Mesoamerica and nutritional anthropology, as well as a member of the honorary board of the Weston A. Price Foundation. He was the author of seven books, including *Your Body Is Your Best Doctor*, and 170 articles and reviews. Professor Abrams helped popularize the work of Weston A. Price and was always quick to point out the fact that all traditional cultures consumed animal products in the diet.

Homeopathy Journal

REMEDIES FOR MERCURY TOXICITY

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

METAL MAGIC

We formed a circle on the kindergarten floor awaiting our teacher's attention. Miss Miller's "show and tells" were the best. She explained that we were to learn about a special liquid metal called mercury. The small silver balls were passed around for us to play with on the linoleum floor. At five years old everything is magical.

The innocence of the 1950s still plagues us. Today, scientists warn us about the dangers of mercury, and if a teacher today were to allow us to play with mercury, she would be subject to the wrath of parents and school board and cited by the DEC. Hardly magical any more.

What about those of us who had been exposed to mercury half a century ago? And those who have suffered its dire consequences on a day-to-day basis via dental amalgams? Consider a medical method that has a world wide reputation with a proven record: homeopathy. Homeopathy has provided a way of dealing with mercury poisoning and the likes for the last 200 years.

Homeopathy is an intelligent form of medicine that treats the person as an individual. Unlike modern medicine that treats symptoms, homeopathy focuses on the individual and how he is physically and mentally experiencing the illness. From the homeopathic point of view, illness is expressed through the body's innate intelligence via symptoms. Homeopaths don't want to erase symptoms. Instead the goal is to use these symptoms to determine which homeopathic remedy best suits the individual. The homeopathic physician first carefully notes the symptoms and then looks for a match to a homeopathic remedy that has been shown to eliminate the sufferings. This will uproot the illness.

Although many confuse homeopathy

with the term holistic, this method is a specific medical discipline that was widely used in the US until half a century ago. It never lost favor in lieu of drugs in England, India, France and Germany, where over 40 percent of the doctors are homeopaths. It is indeed a medical discipline in a unique category.

Homeopathy uses minute amounts of plant, animal and mineral compounds which, when properly administered, stimulate the patient's ability to reach to its most economic function. Homeopathy is predicated on the principle that our bodies have the ability to resolve health issues when given the correct stimulus.

Once homeopathy has been employed and the suffering diminished, laboratory testing to determine the amount of mercury remaining will confirm the changes. This process often takes months but the reward for waiting is worthwhile.

TREATMENT OPTIONS

Each person with mercury poisoning will present in her own way. One, for example, will have ataxia (a type of paralysis), another may have excessive perspiration, a swollen tongue and profuse saliva, while another may have memory loss and foggy thinking. Choosing the correct remedy is best left to a homeopath with solid credentials and experience. However for the sake of interest, let us examine the possibilities.

The most common remedy for addressing poisoning, even at low levels, is Natrum muriaticum 6x (Nat mur). The picture that Nat mur 6x covers is one of oversensitivity. For those who suffer around perfumes, cigarette smoke and chemicals, particularly if mercury is associated with their illness, Nat mur should be strongly considered. It may take time and patience before improvement occurs, but Nat mur 6x can

Once homeopathy has been employed and the suffering diminished, laboratory testing to determine the amount of mercury remaining will confirm the changes.

address the associated issues. This is one of the few remedies that can be recommended for most people who have been exposed to mercury with reasonable accuracy. It can be taken daily for weeks.

If the pathology is paralysis, one of the most valuable remedies is Hepar sulph. Given in proper dosage and timing, it can be most beneficial for those who also are hyper-sensitive. This can include sensitivity to weather changes, sensitivity to pain and to the odors of chemicals, as well as to food and even animals. The need for Hepar sulph may also present with painful and swollen lymph glands. Once the practitioner determines that Hepar sulph is the best match, the patient usually takes it monthly for a specific amount of time, depending on the needs of the sufferer.

Metal poisoning can also cause psychological pathology. Nitricum acidum is a powerful remedy that aids someone who has had a disturbance of the central nervous system as a result of mercury poisoning. Its need is determined by behavior associated with strong and persistent fears of death. It may also be appropriate for someone who worries immensely about their health, often expressed in panic attacks. Nitricum acidum is a mainstay treatment in the homeopathic literature.

Homeopathic Sulphur should be considered if mercury poisoning is associated with heat. For

example, the person may experience heat in an uncomfortable way. He may find that perspiration is excessive and that his odors are of an offensive or metallic nature. This is a remedy that has been shown clinically to provide immeasurable relief for children who have had reactions to vaccines laced with mercury. It can be of value even years after the time of the inoculation.

A TESTIMONIAL

Consider the case of Robert. On a Thursday, this healthy six-week-old newborn was inoculated for polio. By Saturday he was too weak and limp to nurse and presented with a temperature of 105 degrees. His parents linked the reaction to the vaccine since nothing else in his short life could be associated with such a reaction. After three days of suffering, Robert was given two doses of Sulphur 200c. The fever and listlessness were aborted within hours and Robert resumed nursing happily with no residual illness. What is most remarkable in this case is the absence of side effects. Homeopathy has a sterling reputation for results such as this.

The above remedies provide only a small sample of the choices a homeopath has at his or her disposal for reinstating health in someone suffering from the ill effects of mercury. Thus, even mercury is not to be feared in light of homeopathy's reputation. Nonetheless, if our guileless Miss Miller had known about the dangers of this metal, she might have sought elsewhere for a source of magic with which to dazzle us. ☯

Joette Calabrese, HMC, CCH, RSHom (NA) is a homeopathic consultant and educator. She is on staff at the British Institute of Homeopathy, Chautauqua Institute, Chautauqua, New York and Daemen College, Amherst, New York. Her CD, "Perform in the Storm," is a convenient study of homeopathic first aid. Her CD, "Secret Spoonfuls; Confessions of Sneaky Mom" is a Weston Price-styled primer. Both, as well as "Tips for a Return to Health" are available on her website www.homeopathyworks.net.



WAPF office manager Kathy O'Brien Kramer with groom Kirk Kramer and Cathy Raymond, administrator for the Farm-to-Consumer Legal Defense Fund.



Children watch while the bride puts on a juggling performance, in preparation for juggling married life and office duties.

Ask the Doctor

TREATING LOW BLOOD PRESSURE

By Thomas Cowan, MD

Question: We always hear about the dangers of high blood pressure but my problem is low blood pressure, which makes me dizzy and tired. Is there anything that can be done for low blood pressure?

Answer: Over the years many of my patients have asked me about the significance of low blood pressure. This is a very interesting and surprisingly complex question, which merits some background information.

The official definition of normal blood pressure is around 120/80. Yet years ago, when I was in medical school, we were taught that the norm was dependent on one's age, so that the systolic (top number) was normal if it was 100 plus the patient's age over 90 or below. In fact, even though this way of looking at blood pressure is no longer considered valid, there has been no major study that I know of that shows a better prognosis in any measurement when the blood pressure is lowered with drugs to the level of 120/80 in elderly people.

Low blood pressure, on the other hand, has never been defined or been associated with an increase in any disease category. In fact, doctors today suggest that the lower one's blood pressure the longer the life span and that those whose blood pressure doesn't increase with age have some of the lowest overall all-cause mortality rates.

However, over the years I have had many patients who present with a picture of weakness that more times than not includes a significantly low blood pressure. By low blood pressure, I mean people whose blood pressure is less than 90/60. The typical person with blood pressure this low also complains of overall lowered vitality, sometimes allergies, almost always cold hands and feet and usually lowered libido. In serious cases low blood pressure can cause light-head-

edness, dizziness, weakness and fainting. All of these symptoms suggest a general overall lowering of one's vitality. The low blood pressure is not the cause of this syndrome, nor is it by itself a sign of poor health, but in conjunction with these other symptoms suggests a state of low vitality.

So the question is what do we mean by low vitality and how does this correlate with these symptoms?

The regulation of blood pressure is a mysterious process which involves at least three mechanisms working in complex relation to each other.

1. Receptors—called baroreceptors—which reside in various organs and detect changes in arterial pressure. These receptors adjust the pressure by altering the force and speed of the heart's contractions, as well as the resistance in the arteries.
2. The renin-angiotensin system (RAS), involves hormones secreted by the kidneys. When blood pressure drops, the kidneys compensate by activating a vasoconstrictor called angiotensin II. When the kidneys do not produce enough of this hormone, blood pressure will also be low.
3. Aldosterone is a steroid hormone produced by the adrenal cortex, which stimulates sodium retention and potassium excretion by the kidneys. When aldosterone is increased, the body retains fluid retention and blood pressure is raised. Alternately, low aldosterone production will result in low blood pressure.

As I have discussed in many other articles the adrenal hormonal output is directly involved in many symptoms of low blood pressure, not only is low aldosterone production associated

(Continued on page 60)

The regulation of blood pressure is a mysterious process which involves at least three mechanisms working in complex relation to each other.

Know Your Fats

SOME ADDITIVES IN VEGETABLE OILS

By Mary G. Enig, PhD

We often hear people say that they consume vegetable oils and avoid animal fats because “animal fats are full of pesticides.” Some animal fats do test high in pesticides, notably butterfat in conventional milk, cheese and ice cream and certain types of seafood, especially catfish, lobster and mollusks. However in a recent survey, soy bean oil tested almost as high in DDT, TDE and DDE as milk fat. (Conventionally grown potatoes, sweet potatoes and carrots also tested high; fish contained levels four times greater than those in butterfat.¹)

By now you know that consumption of vegetable oils is associated with many health problems, from cancer and heart disease to growth problems and learning disabilities in children. The answer to the problem of pesticides in animal fats is not to replace them with vegetable oils but to avoid commercial versions of these animal foods and choose pasture-raised, or at least organically raised, versions instead. And, as we have pointed out in these pages, vitamin A from animal fats and organ meats provides powerful protection against dioxins.²

HEXANE

One thing you will not find in animal fats like butter, egg yolks and meat fat is hexane. This food-grade gasoline is the dominant solvent used in oilseed extraction throughout the world. It is very volatile, flammable and explosive—causing many explosions and fires in vegetable oil plants, and even a few in fast food fryers.

The EPA now categorizes hexane as a HAP (hazardous air pollutant), included on the list of 189 toxic chemicals. Inhalation of hexane can damage the nervous system, leading to numbness in the hands and feet, followed by weakness in the feet and lower legs. Paralysis may develop with continued exposure. Most at risk are those working in closed industrial facilities with hex-

ane-containing solvents and glues. At very high levels of hexane in the air, signs of damage to sperm-forming cells in male rats occur.³

But the big question for the average consumer concerns the effect of hexane when it is ingested. Government and industry have tended to gloss over potential problems. “Because cooking oils are processed with solvents containing hexane, very small amounts may be present in these products. However, the amounts in cooking oil are too low to have any effect on people.”⁴

As for whether hexane causes cancer, official statements show a similar lack of concern: “There is no evidence that exposure to hexane increases the risk of cancer in people. No reliable information is available on whether hexane causes cancer in animals.”⁵ This is because very few studies have been carried out to determine the carcinogenicity of hexane. One of the few did find an increase in liver cancer in female mice after exposure for two years; no increase was found in male mice or in rats of either sex.⁶

And there may be other adverse effects. According to the Material Safety Data Sheet for Hexane, the substance is “Harmful or fatal if swallowed.” Ingestion may produce abdominal pain, nausea and symptoms that parallel those of inhalation, including “lightheadedness, nausea, headache and blurred vision. Greater exposure may cause muscle weakness, numbness of the extremities, unconsciousness and death.” Interestingly, one fact sheet on hexane lists high blood sugar as a toxic effect.⁷ Gastroparesis (literally, paralysis of the stomach, in which the stomach cannot churn and digest food) is another reported effect.⁸

In 1997, researchers using a new technology found higher-than-expected levels of pentane, hexane, heptanes, octane and benzene derivatives in all six hexane-extracted samples of cooking oils tested.⁹ This means that humans may

One thing you will not find in animal fats like butter, egg yolks and meat fat is hexane.

The presence of hexane and powerful antioxidants provides yet more reasons to avoid vegetable oils and products made with them.

be ingesting greater amounts of these petroleum derivatives than previously thought.

And it means that animals are ingesting higher levels also. Hexane levels in solvent-processed vegetable oil residue used for animal feed can run as high as 0.5 percent, enough to create a known mild toxicity that precludes the use of solvent-extracted meal in a number of markets, such as pig feeding. (It kills baby pigs, whose digestive tracts are similar to those of humans.)¹⁰

Those consuming solvent-extracted commercial vegetable oils every day—and that includes all fried food like French fries and Chicken McNuggets, commercial salad dressings, and cooking oils—are subjecting themselves to long-term chronic exposure, the effects of which are anybody's guess.

ANTIOXIDANTS

Because processing of fragile vegetable oils creates free radicals and other highly reactive breakdown chemicals, these products require the addition of potent antioxidants like BHT, BHA and—the latest entry—TBHQ. A list of adverse effects from these substances includes cancer in various sites, liver toxicity, kidney and bladder toxicity, depression of thyroid function,

and changes in behavior.¹¹ TBHQ, in particular, makes test animals susceptible to stomach tumors and causes damage to DNA.¹²

An internet search reveals reports of behavior changes in children, including decreased concentration and learning ability and “screaming fits, teary, really temperamental, like world war three, and waking at night,” on exposure to unlabeled BHA and TBHQ.¹³ These additives are also found in commercial lard and beef tallow, so purchase these from a farmer you know and trust! The presence of hexane and powerful antioxidants provides yet more reasons to avoid vegetable oils and products made with them.



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(Low Blood Pressure, continued from page 58)

with low blood pressure, but low cortisol (an adrenal hormone) is connected with allergies and fatigue; low sex hormone production (produced in part by the adrenal glands) is also related to adrenal hormone output and low libido. In other words, the lowered vitality that one often sees related to low pressure is a direct symptom of low adrenal and kidney hormone production. This is the issue that needs to be addressed, not specifically a strategy to raise the blood pressure.

The way I address this specific variation on low adrenal function is to suggest a nourishing traditional diet along with adaptogenic herbs and supplements. The diet should contain an abundance of healthy fats, organ meats, raw animal foods and lacto-fermented foods. These provide the vitamins, minerals and enzymes, that is the raw materials, that the body can use for hormone production. Specifically, the adrenal gland uses good fats including cholesterol to produce hormones. Vitamins A, B₆ and C are cofactors

in the production of these hormones and are abundant in the nourishing traditional diet. Vitamin A is available from cod liver oil; vitamin B₆ from raw animal foods; and vitamin C is plentiful in lacto-fermented foods such as sauerkraut.

These patients also need to have a high mineral diet, especially in the form of daily soup broth and liberal amounts of Celtic or Himalayan salt. Sometimes if warmth is the main issue, extra fats and oils are needed, in particular one teaspoon of high-vitamin butter oil in addition to one teaspoon of cod liver oil.

It is imperative that the patient completely remove all *trans* fats from the diet. These interfere with adrenal hormone production and may also inhibit the function of the baroreceptors

The adaptogenic herb I have found most useful in this situation is one of the forms of ginseng, such as Eleutherococcus or Korean ginseng. I like to use the high potency forms from Mediherb like eletherococcus tablets at a dose of one tablet, 2-4 times per day, or Rhodiola/ginseng (Rhodiola is another strong adaptogenic herb) at the same dose. I also add the standard process protomorphogen of the adrenal gland called Drenatrophin at a dose of one tablet, three times per day.

With these simple interventions these symptoms can be lessened, the blood pressure raised to normal and the patients often feel much better.



All Thumbs Book Reviews

***Minerals for the Genetic Code:
An Exposition & Analysis of the Dr. Olree
Standard Genetic Periodic Chart & the
Physical, Chemical & Biological Connection.*
By Charles Walters
Acres, USA, 2006**

Dr. Richard Olree, a chiropractor who calls himself a “theoretical geneticist,” has put forth a new theory about the nature of the genetic code that, if correct, would revolutionize the field of genetics. The theory stipulates that each of the 64 codons, the basic units of the genetic code, requires its own unique mineral—thus greatly expanding the list of essential nutrients.

Charles Walters, founder of the eco-agriculture publication *AcresUSA*, has transmitted this theory to book form in the 2006 title, *Minerals for the Genetic Code*. While the book contains an interesting introduction to the history of biological science, an excellent interview with cancer researcher and genetic engineering critic John Fagan, and a useful 100-page appendix listing important food sources of various trace minerals, Walters devotes less than one hundred pages to his description of Olree’s theory and is remarkably silent about the experimental basis for this theory—assuming one exists at all.

LACK OF EXPERIMENTAL EVIDENCE

The book begins with a foreword on the dangers of fluoride and its first several chapters deliver scathing critiques of the modern medical system and commercial soil chemistry. Walters then narrates the fascinating stories of the discoveries and experimental demonstrations of some of the most basic chemical and biological concepts that we take for granted today.

For example, the Flemish physician Jan Baptista van Helmont first demonstrated in the seventeenth century that trees synthesize most of their tissue from water or air rather than from soil by planting a tree in an isolated tub and measuring

the weight of the soil before and after it grew.

The English scientist and preacher Stephen Hale tried to test whether plants consumed air by clamping a glass container over a number of peppermint plants and measuring the change in atmospheric pressure, but the plants simply died. Later research demonstrated that animals and plants changed the air in opposite ways, each allowing for the survival of the other, and that plants only changed the air in the presence of light. Through many well-designed and well-controlled experiments, we now know that plants produce glucose from carbon dioxide and water, releasing oxygen, and that animals conversely break down glucose with oxygen, releasing carbon dioxide and water. Walters narrates in like manner the discoveries of the periodic table of the elements and the genetic code.

When, after more than 80 pages, Walters finally begins describing Olree’s theory, he leaves the reader infinitely less impressed. Rather than describing solid experimental research as in the previous section, Walters describes a “eureka” moment back in 1981 when Olree realized he could tie the genetic code in to a chart he had already made drawing relationships between color therapy, aromatherapy, acupuncture and a Chinese sacred text called the *I Ching*. Walters likens this sudden insight to Archimedes’ discovery that he could determine the density of the king’s crown, and thus whether it was made of pure gold, by measuring the water it displaced in a bathtub, and to Friedrich Kekulé’s realization that benzene could be structured as a hexagon while staring at the shapes made by the smoke rising from his fireplace.

The basis of the theory is the repetition of the number 64 in various natural and philosophical systems. The vertebral column develops from 32 embryonic structures called somites that eventually become vertebrae and 32 spaces that eventually become intervertebral discs, together making 64 points along the spine. The ancient



Walters devotes less than one hundred pages to his description of Olree’s theory and is remarkably silent about the experimental basis for this theory—assuming one exists at all.

All Thumbs Book Reviews

Chinese text, the *I Ching*, is a compilation of hexagrams with six positions that can be filled with either solid or broken lines, making 64 possible hexagrams, each of which is associated with a certain psychological trait. Olree noticed in his private practice that misalignments of certain vertebrae were associated with particular psychological changes and began mapping out the associations between the 64 points along the spine and the 64 hexagrams of the *I Ching*. He used a 1926 version of the periodic table of the elements made by Walter Russell, an artist and architect credited with coining the term “New Age” and with hypothesizing the existence of various subatomic particles now known to exist. This table contained far fewer elements than the current table contains, as well as 22 subatomic particles not included on the current table. It was organized into nine octaves. The ninth octave contained radioactive elements, while the first eight octaves contained 64 non-radioactive elements and subatomic particles. Referring to these collectively as “minerals,” Olree designated each vertebral point with its own mineral and its own hexagram of the *I Ching*.

When Olree stumbled upon a book called *DNA and the I Ching*, a new theory of genetics was born. The book drew an analogy between the codons of DNA and the hexagrams of the *I Ching*. DNA is like an alphabet in which each of four nucleotides represents a letter. Nucleotides consist of nitrogen-containing ring structures called nitrogenous bases that are attached to sugars and phosphate groups. The four bases making up the nucleotides in DNA are adenine (A), guanine (G), cytosine (C) and thymine (T). When the cell makes a protein, it first makes an RNA copy of a particular DNA sequence using the same bases, except it replaces thymine (T) with uracil (U). The RNA copy is then used to make the protein. Each of these “letters” makes up a three-letter “word” called a codon. Each codon codes for a particular amino acid that will

be used to make the new protein; for example, AUG codes for methionine. There are 64 possible codons in the “languages” of DNA and RNA. The book drew an analogy between these 64 codons and the 64 hexagrams of the *I Ching*. Olree had already determined that each *I Ching* hexagram corresponded to a particular position in the vertebral column and to a particular mineral; once he realized the connection between the *I Ching* and DNA, then, the relationship between the latter and the 64 minerals of Russell’s periodic table became self-evident.

Olree synthesized all of this information into the “Olree Biological Periodic Chart.” Each of the 64 entries contains the name of the mineral, its electric charge, the number Russell had assigned to it, the *I Ching* hexagram Olree assigned to it, the RNA codon to which it corresponds, the amino acid coded for by the RNA sequence, the number of times the codon appears in the human genome, the point on the vertebral column to which it corresponds, the hour of the day during which a particular acupuncture meridian that Olree also assigned to the mineral regenerates, and the psychological trait associated with the *I Ching* hexagram. Examples of the psychological traits include “before the end,” “after the end,” “insight,” “conscientiousness,” and “reuniting.”

Walters gives no description of precisely how Olree assigned the minerals to their respective codons. For example, why does UGU correspond to arsenic and not to calcium? No answer is given. Buried deep in the book, however, under the entry for the “subatomic mineral” barnordon, Walters gives us a disturbing description of how Olree assigned the minerals to the vertebral positions in Olree’s own words: “I like the third law of physics. For every action [there is] an equal and opposite reaction. So I [took] the human spine and the 64 amino acids [codons] and concluded that number 1 equals 64, number 2 equals 63, and I laid it out on paper. The opposite of number 9 is number 54, the yttrium area of the spine.

When Olree
stumbled
upon a book
called *DNA
and the
I Ching*, a
new theory
of genetics
was born.

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So treatment at the cervical 5 disc can directly have an effect on yttrium.” In other words, he simply started with the first vertebra and counted backwards down Russell’s periodic table from the last mineral to the first. The great scientists whose work Walters spent 80 pages reviewing at the beginning of the book would have designed experiments to test whether these associations were true, but Olree apparently did not.

AN IMPLAUSIBLE THEORY

The most puzzling part of the theory is the lack of clarity about the exact roles of these minerals. Under the entry for lanthanum, Walters states that silica and lanthanum form “the glue that holds ‘junk’ DNA together,” based on the abundant appearance of their associated codons in these regions of DNA. This suggests that the minerals are actually bound to the DNA itself. In the introduction to the Olree chart, however, Walters states that the minerals associated with the stop codons that signal the end of the protein—sulfur, hydrogen and yttrium—need to be present in order for the protein to be properly made from the RNA copy, or else the protein will be made in fragments and degraded. This suggests that the minerals interact with RNA during protein synthesis rather than with DNA. Both propositions are implausible because scientists reproduce these processes in test tubes all over the world every day without ever adding lanthanum or yttrium to the mix. Without certain enzyme cofactors like magnesium, the processes will not go forward, but the absence of yttrium never results in fragmented proteins.

Another question also arises: if these minerals are essential components of DNA or RNA, why is it that no one has found them there? Indeed, some of the statements in the book make it ambiguous whether one should expect to see some of these minerals in the body at all. For example, the mineral scandium is said to be associated with proline, an important amino acid

that makes up roughly one third of the collagen molecule. According to Olree, scandium is abundant on the sun but is the rarest mineral on the earth. He posits that scandium is somehow transmitted to us through electromagnetic radiation when we are exposed to sunshine. According to one of his lectures available on the internet,¹ the “DNA sequence of vitamin D”—by which he must mean the sequence for the vitamin’s receptor or an enzyme that metabolizes it—is rich in the scandium-associated codon, which he says explains why we need sunlight for vitamin D. One must wonder, however, whether we receive the actual scandium from sunlight or only its spirit.

The case of the seven noble gases is similar. Noble gases such as argon and xenon are, outside of this particular book, universally regarded as irrelevant to biology because they do not engage in chemical reactions. They nevertheless have their place on the Olree chart. Since they do not form charges and thus do not interact with biological molecules, however, Walters states that their presence in the genome may be more “psychological” than “physical.”

It would appear that Olree’s theory is based not on any experimental evidence, but merely on the analogy between the repeating pattern of 64 in the several natural and philosophical systems he has tied together. Putting aside the questions of whether all 22 of Russell’s “subatomic minerals” actually exist as such and whether the exclusion of all the minerals in the ninth octave and the inclusion of all the others was justified, the analogy is weaker than it first appears. DNA and the *I Ching* arrive at the number 64 in very different ways: DNA uses four symbols in three positions (four multiplied by itself three times is 64) while the *I Ching* uses two symbols in six positions (two multiplied by itself six times is 64).

The *I Ching* becomes analogous to the genetic code only if one counts every two lines as a

The most puzzling part of the theory is the lack of clarity about exactly what the roles of these minerals are.

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single symbol. This will make the two symbols (solid and broken) become four symbols (solid-solid, solid-broken, broken-solid, broken-broken) and thus analogous to the four DNA bases (A, G, C, T) and will make the six single lines of the hexagram become three line pairs and thus analogous to the three nucleotides of the codon.² But this maneuver simply manipulates the *I Ching* into something it is not.

Moreover, the DNA code is redundant. Although there are 64 codons, they collectively code for only 21 meanings. Sixty-one of them code for the twenty amino acids that are incorporated into proteins and three of them act as stop signals.³ By contrast, each hexagram of the *I Ching* has its own meaning and each mineral of the Russell table is unique.

Both the structure of DNA and the redundancy of the genetic code make it especially difficult to figure out where in the biological process these minerals fit in. DNA exists as a double-stranded twist where all of the codons have their binding sites connected to the codons of the opposite strand. The binding patterns are dependent on the individual nucleotides, however, and not on the full codon. A always binds to T and C always binds to G. A-T and C-G are the only two binding patterns in DNA. If minerals were to somehow fit between these bases without completely disrupting the structure of DNA, there would be room only for two, not for 64. When the cellular machinery makes a protein from DNA, it first makes a copy of messenger RNA (mRNA). The synthesis of the mRNA molecule is dependent on the same type of base-pairing that occurs within the DNA molecule itself, so again there is no room for 64 different minerals in the process. Protein-producing machines called ribosomes then read the mRNA transcript and molecules called transfer RNAs (tRNAs) act as forklifts that bring the appropriate amino acid to the ribosome at the appropriate time so the ribosome can connect the amino acids together and make a protein. Each tRNA molecule has an “anti-codon” that corresponds to one or more codons of the mRNA, but there are not 64 tRNAs; there are only 20, each one corresponding to one of the 20 amino acids.³ Thus, it makes little sense that the codons of the mRNA molecule would require 64 different minerals to interact with 20 different tRNA anti-codons.

Moreover, the nature of biology is to conservatively utilize the least number of patterns possible. For example, a basic zinc-requiring finger-shaped pattern called a “zinc finger motif” repeats itself over and over again in molecules that interact with DNA, rather than each molecule requiring a different mineral to make the finger.⁴ There are thousands of proteins that incorporate zinc because of its unique structural utility, but other minerals like aluminum are not known to coordinate the structure of any proteins because their properties are less useful or even harmful. Olree’s theory, by contrast, posits the use of 64 different minerals to fulfill very similar or identical functions within a single system and thus violates the basic principles of how biological systems are designed.

STRANGE CONCLUSIONS

Olree’s theory leads to some very strange conclusions. For example, the RNA codon UGG codes for the amino acid tryptophan and is associated with the “subatomic mineral” marconium, the 6:00 PM regeneration of the kidney meridian, and the cervical disc 7, which itself is associated with the nerve connected to the thyroid gland. Olree thus concludes that the thyroid gland falls under the energy field of the kidney and that, since the thyroid gland consumes a great deal of iodine, iodine is the most important element for kidney function. Most other practitioners or researchers would set out to test the ability of treating the kidney to normalize thyroid function or the ability of iodine to normalize kidney function before they would draw such a conclusion.

Olree’s strangest conclusions concern the minerals selenium and yttrium—these are also two of the minerals whose dietary importance he emphasizes the most, both in the book as conveyed by Walters and in his own talks.¹ His own chart ties the stop codon UGA to yttrium. Modern science, however, has tied it to selenium. Olree thus concludes that selenium is only used for the stop codon as a backup mineral when yttrium is deficient, implying that we are suffering from a widespread yttrium deficiency. Yet modern science has not tied selenium to the stop codon; rather, it has shown that the UGA codon when adjacent to certain selenium insertion sequences can code for the modified amino acid selenocysteine instead of the stop site.⁵ Olree seems completely unaware of the fact that every single selenoprotein in the body incorporates selenocysteine in this manner. He is adamant that selenium must be taken in as selenomethionine, which often occurs in plants and plays no known role in the animal body, but makes no mention of selenocysteine, the form commonly found in animal foods like liver.⁵

In addition to his speculation that selenium’s connection to the UGA codon is a result of yttrium deficiency, Olree also discovered “clear

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cases of yttrium deficiency not allowing for protein synthesis” when he found that two defective myelin proteins involved in multiple sclerosis were abundant in the UGA codon. Much more impressively, he uncovered actual experimental evidence that yttrium can dramatically increase lifespan in certain animals, but this effect does not necessarily confirm Olree’s speculations about its involvement in the genetic code. The section on this mineral and its entry in the appendix suggests that certain bacteria of the *Bifidus* genus, cabbage, and various other plants are the best sources of yttrium. Eating sauerkraut, cultured milk and other probiotic foods or forms of cabbage might be a harmless way to obtain yttrium, then, but Olree’s views on selenium might warrant more caution.

Minerals for the Genetic Code cites a 1996 report showing that 200 micrograms of selenium per day reduced the risks of several types of cancer.⁵ In a 2005 lecture available on the internet,¹ Olree refers to another report showing that the same dose of selenium increased the risk of type 2 diabetes.⁷ Olree says that this was probably because they used sodium selenite instead of selenomethionine. These two reports are actually two separate analyses of the same double-blind, placebo-controlled study. It used high-selenium yeast, which contains most of its selenium as selenomethionine. The protection against cancer was seen only among the two-thirds of the participants with the lowest plasma selenium levels at the beginning of the study; in the one-third with the highest levels, participants who supplemented with selenium had 20 percent more cancer than the participants who took the placebo, although the effect could not be conclusively distinguished from the effect of chance. Selenium supplementation had no effect on the risk of type 2 diabetes in the bottom two-thirds, but in the top third it increased the risk by 30 percent, an effect that was conclusively distinguished from that of chance. It is possible that the selenium would have been protective even for people with higher levels of

the mineral had it been in the form of selenocysteine or had other important cofactors been provided with it such as vitamin B₆ or bioavailable cysteine from raw proteins, but this study certainly does not justify Olree’s enthusiasm for selenomethionine supplements.

Although the book does not make any specific recommendations for supplementation, it may lead many people to believe they should supplement with minerals such as lanthanum, yttrium, strontium and arsenic in addition to selenomethionine. Though it is possible that trace amounts of these minerals may play unknown essential roles in the body or be otherwise beneficial in certain circumstances, supplementation could also be harmful. Until we understand more about their potential benefits and toxicities and their mechanisms of action, we should be sure to obtain traces of these minerals only in traditional foods.

ULTIMATELY DISAPPOINTING

After the superb introduction to the history of biological science that Walters weaves through the first 80 pages of the book, it comes as a major disappointment when he devotes only several pages in total to the basis of the theory that constitutes the book’s main subject and even less material explaining the mechanisms by which the minerals are supposed to interact with the genetic code. Part 2 of the book provides an impressive amount of information about the general roles of various minerals in human nutrition, but one would expect the book to discuss their specific roles in organizing the genetic code, which is largely left out. The interview with Fagan and the 100-page appendix on food sources of minerals are both useful. Despite a number of interesting and valuable sections in the book, however, it ultimately fails at its central task—to convince the reader that Olree’s 64 minerals are in fact essential to the genetic code. ☹☹☹

Reviewed by Chris Masterjohn

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***The Genotype Diet:
Change Your Genetic Destiny to Live the
Longest, Fullest and Healthiest Life Possible*
by Dr. Peter J. D'Adamo
Broadway, 2007**

Peter D'Adamo, creator of the blood type diet (*Eat Right 4 Your Type*), has taken his program to the next level and added a series of genetic and developmental characteristics to his dietary regimen. He has categorized his assessments into six fun and nifty categories which all require slightly different dietary approaches including the Hunter, the Gatherer, the Explorer, the Teacher, the Nomad and the Warrior. As with the blood type diet, he claims that these various genotypes evolved to handle different life and environmental conditions, and he gives considerable focus to the immune system responses of each type to these challenges.

The process of determining your genotype can be done on three levels, depending on how much information you have available. The variables are quite interesting and include the quality of your fingerprints, the proportions of the upper and lower body, length of ring finger versus fore finger, and whether or not you can taste the chemical propylthiouracil, a drug used to treat hyperthyroidism.

The explanations for how these variables arise and affect our health are a great argument for superior pre-natal nutrition. Body symmetry—in the form of fingerprints—is a consideration in the assessments. This is strongly related to pre-natal stresses, and correlates with overall health.

However interesting these variables may be, (they were the reason I bought the book) D'Adamo never offers any clear explanation of how they relate to the genotypes. The book promises further information on its website, but the material there provides no more than the book, except for the opportunity to spend some

money to join up for coaching and recipes, and a cool online genotyping tool.

The diets themselves seem rather arbitrary and there is no explanation of why, for example, beef and beef liver are beneficial to the Hunter type, but this type must never touch beef heart or caviar. Some of the food recommendations—as well as some of the foods to avoid—were things that I've never heard of and are unlikely to be part of the typical American diet. Explorer types are supposed to benefit highly from camelina oil, for example, but quark cheese is toxic for them. This same genotype is characterized by exhibiting inflammatory conditions, but omega-3 rich flaxseed and cod liver oils are verboten. In fact, D'Adamo gives somewhat confusing advice about EFAs, suggesting that omega-6s are helpful in reducing inflammation. Perhaps the most absurd suggestion is his recommendation to take supplements instead of real food. Teacher genotypes should take a paltry 400-800 IU of vitamin D daily, yet all forms of liver are purportedly toxic to this type.

No doubt Dr D'Adamo has been able to help people with his methods, or he would not have such a following. But this is more likely to be because of his general food recommendations, which represent an overall improvement in the standard American diet. He does suggest high quality foods including grass-fed meats, for example, and advises against farm-raised fish and rancid oils. Not smoking and regular exercise are also part of his program, and as with any multi-pronged approach, it is hard to tell what might be providing the most benefit.

One the whole, despite some intriguing information, *The Genotype Diet* is a disappointment. ☹ Reviewed by Selina Rifkin

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The diets themselves seem rather arbitrary and there is no explanation of why, for example, beef and beef liver are beneficial to the Hunter type, but this type must never touch beef heart or caviar.

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In Defense of Food: An Eater's Manifesto

by Michael Pollan

Penguin Press, 2008

Michael Pollan is an elegant and engaging writer. He can take a complex subject and weave its many threads into a seamless narrative that is both highly informative and eminently readable. With his best selling *The Omnivore's Dilemma*, he opened the eyes of the masses to the ecological and ethical dimensions of our food choices. No wonder so many people concerned with the future of agriculture and our food supply began to think of him as Saint Michael.

It feels a bit like blasphemy, then, to take issue with his current offering, *In Defense of Food*. It has much to recommend it, especially when he delineates how we came to the current sorry state of affairs in which human beings—who have been eating for millions of years—suddenly find themselves in need of expert guidance for this most basic activity. He gives us a history of the confluence of well intentioned government policy, flawed science, industrial profiteering, and regulatory idiocy. As a result, food itself now needs to be defended against the Nutritional Industrial Complex, which conspires to disassemble and then reconfigure it in beguiling new forms, in response to ever changing nutritional ideology.

The concept of “Nutritionism” is one of the catchy hooks upon which he hangs his story. It is the central theme for his powerful case against our modern food culture. Essentially, nutritionism is the widely shared but unexamined assumption that the key to understanding food lies in its individual nutrients. Because these are abstract and invisible, we need scientists and journalists to explain them to us. We then begin to think of food only in terms of bodily health, and lose sight of its pleasurable and social aspects. Food becomes nothing more than a nutrient delivery system, and the distinction between whole and

processed foods is lost.

Nutritionism is complex and reductionist, Pollan says. His antidote to the resulting confusion is this simple admonition: “Eat food. Not too much. Mostly Plants.” Clever. And it works. But only up to a point. At the end of the book, as he fleshes out these simple phrases, he offers invaluable guidelines to help reprogram the victims of nutritionism: Accept as food only things that your great-grandmother would have recognized as such. Buy a good portion of it from local farmers who raise “well-grown food from healthy soils,” or better still, grow some of it yourself, if only a pot of herbs. Take time to prepare meals yourself, and sit down at the table with family and friends to enjoy it together in a leisurely way.

His goal is to help us reclaim our health and happiness as eaters by opting out of the Western Diet. But we may not get there from here using his directions, because there is a fundamental disconnect between his excellent analysis and some of his recommendations—often obscured by his enormous skill as a writer.

He tells us to eat less meat and that just about any old traditional diet will do. He tells us to eat more plants, but never more saturated fat. Indeed, he continually refers to saturated fat as something to be avoided. It is hard to understand how he comes to such conclusions when they contradict what he has said elsewhere in the book.

We will come back to these points later, but first let us look at what he has to say about the rise of nutritionism. As he tells it, the crucial moment was in 1977, when the McGovern Committee on Nutrition and Human Needs formulated their Dietary Goals for the United States. Because they embraced the “lipid hypothesis”—which held that the consumption of fat and dietary cholesterol was responsible for the rapidly rising rates of heart disease during the twentieth century—they initially advised Americans to “reduce consumption of meat and dairy products.” In the face of pressure from the powerful meat and dairy industries, however, the wording was changed to “choose meats, poultry and fish that will reduce saturated fat intake.” According to Pollan, the implication of this apparently simple change was profound: The focus was now on individual nutrients rather than on actual foods.

This shift of focus supplied the “ultimate justification for processing food by implying that with a judicious application of food science, fake foods can be made even more nutritious than the real thing.” What followed was thirty years in which we replaced fats with carbohydrates, and have become less healthy and considerably fatter.

But now, Pollan tells us, scientists have come to see that the whole low-



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fat campaign was bogus. He quotes prominent scientists as saying that “it is now increasingly recognized that the low-fat campaign has been based on little scientific evidence and may have caused unintended consequences.” An example of flawed evidence and logic cited by Pollan is the promotion of the lipid hypothesis even though “during the decades of the twentieth century when rates of heart disease were rising in America, Americans were actually reducing their intake of animal fats (in the form of lard and tallow). In place of those fats, they consumed substantially more vegetable oils.” He devotes an entire chapter to this logical sleight of hand, “The Melting of the Lipid Hypothesis.”

So far so good. But round about here he opines that it is hard for him “to imagine the low fat/high carb craze taking off as it did or our collective health deteriorating to the extent that it has if the Committee’s original food based recommendations had stood: Eat less meat and dairy products.” Actually, I seriously doubt that the original wording by the McGovern Committee would have prevented the increasing presence of ersatz carbohydrate foods in the American diet. As Pollan has explained so well, both here and in his many other writings, the forces of agriculture and the food industry were perfectly poised to take advantage of any opportunity by which they could increase the sale of corn and soy, using all the food engineering, marketing and regulatory influence that money could buy. The taboo against the eating of traditional fats itself was all the opening they needed to push such an agenda.

More crucially, Pollan makes a compelling case that the lipid hypothesis on which the McGovern Dietary Goals were based, whatever the choice of words, was seriously flawed. By what logic does Pollan demolish the foundational hypothesis itself, but then accept with approval the major recommendation it engendered? Pollan doesn’t say, and that is one of the puzzles of this book.

Such contradictions continue to crop up, as for example: “But eaters worried about their health needn’t wait for science to settle this question [what it is about a meat-heavy diet that causes higher rates of coronary disease and cancer] before deciding that it might be wise to eat more plants and less meat. This of course is precisely what the McGovern committee was trying to tell us.”

Pollan’s frequent refrain that we should “eat less meat” seems to assume that the unhealthful consequence of eating a lot of meat is settled science. It is not—he makes it seem so by sleight of hand. He slips in references to research on the matter without giving it the kind of scrutiny he himself applies to nutritional studies in other parts of the book. For example, is it known what kind of meat the subjects in these studies were eating? Was it grain-fed or grass-fed? Pollan makes it abundantly clear that the two are completely different foods, and advocates eating only the

pastured variety. Studies with conclusions about meat tell us nothing unless this distinction is made.

He cites as a particular authority for the conclusion that we should limit meat *The China Study*, by Colin Campbell. This was an epidemiological study, subject to a myriad of misinterpretations—as Pollan demonstrates when he explores the pitfalls and limitations of modern nutritional studies in the chapter “Bad Science.” He closes that section with this comment from a noted epidemiologist: “I don’t believe anything I read in nutritional epidemiology anymore.” But inexplicably, Pollan evinces no such qualms about swallowing *The China Study*.

Finally, in suggesting that we needn’t wait for science to settle exactly what it is about eating meat that supposedly causes coronary disease and cancer, Pollan ignores his previous implication that our present national dietary disaster was created when the McGovern Committee acted in a similarly precipitous manner.

Here is another puzzle: Why does he disregard major portions of the work of Dr. Price in preference for others? He gives us a lengthy discussion of the findings of Dr. Weston A. Price, some of which are slightly misrepresented—just enough so to support the anti-meat stance Pollan seems bent on taking. For example, he says that Price found populations who “thrived on diets in which fruits, vegetables and grain predominated.” This statement is not accurate, since it gives the impression that animal foods were not fundamental among the populations Price studied; and is contradicted when he himself says, “Price found groups that ate diets of wild animal flesh to be generally healthier than the agriculturists who relied on cereals and other plant foods . . .” with “the healthiest of all the populations” Price studied being “. . . tribes that subsisted on milk, meat, and blood from pastured cattle as well as animal food from the Nile River.”

He reports that Price found these diets to

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be “on average ten times higher in vitamins A and D than modern diets.” Pollan implies that the discrepancy had to do with the stripping of nutrients from grains in modern processing, but in so doing ignores the essential point that these vitamins are only found in animal fats. However, later on he does observe that organ meats with their high levels of fat-soluble vitamins were particularly prized. He notes as well the degree to which the health of pastoral populations was a reflection of the quality of the pasture on which their animals grazed, and the resulting levels of A and D in their butter.

But it is only the connection between the soil and the health of the eaters—the ecological aspects of Price’s work—that Pollan focuses on when making his recommendations. He is content to leave behind all of Price’s conclusions on the value of animal fats, and take away only the partial truth that “the human animal is adapted to, and apparently can thrive on, an extraordinary range of different diets, but the Western diet, however you define it, does not seem to be one of them.”

He did not see that animal fats are the key to reversing the damage done by industrializing our food supply—and indeed, many of the worst aspects of nutritionism. Animal fats are what is missing in Pollan’s attempt to restore us to our proper relationship to food. In this endeavor he notes five different changes that have taken place since we have industrialized our food supply. We have gone from whole foods to refined, from complexity to simplicity, from quality to quantity, from leaves to seeds, and from food culture to food science.

In explaining these transformations Pollan finds that he must borrow from nutritionism’s reductive vocabulary to delve into the implications of a change that he feels is the most egregious of all—that from leaves to seeds. He almost apologizes for doing so. But he needn’t. The fact is, you can’t unopen Pandora’s box. You can’t navigate

the modern food world by ignoring nutritionism as part of the landscape. You need to understand what it is and be able to know it when you see it or you will soon find yourself on the road to nowhere. This is what is so valuable about Pollan’s work: It fills in the map with all the new sideroads and subdivisions. But your journey to the land of optimal health and happiness will be impeded by an uncrossable desert if you ignore guidance from earlier explorers who actually got there.

Price did. And he was unambiguous about the need for animal fats.

We cannot transform the relationship of humans to the soil, as Pollan advocates, without adding back the missing link, that most miraculous of food processors, the grazing animal—a creature who takes leaves from the soil, disassembles and reconfigures them, producing foods that contain the optimal balance of an unimaginable variety of nutrients, many of which science hasn’t even identified, all packaged in their own appetizing and satisfying nutrient delivery systems: meat, milk, and fat.

This is a food system based on plants. And that is exactly what Pollan says we need in order to redress the harm that has been done in the shift from leaves to seeds. But he is in the land of wishful thinking if he believes we can do this by eating more plants, only a tiny bit of meat, and ignoring animal fats. If we follow his directions we will find ourselves still in the grips of nutritionism, but this time with the Nutritional Industrial Complex busily providing us with things like high omega-3 asparagus. We may not be fat, but you can bet we will be very hungry.

We should be grateful that, even though he misses the major import of Dr. Price’s work, he does introduce it to a wider audience; and he does show that the lipid hypothesis was a flim-flam.

We should also be grateful that his next book will be about orchids.



Reviewed by Ellen Ussery. ©Copyright Ellen Ussery May 20, 2008

POLLANISMS

As a challenge to Pollan’s 2-3-2 word sequence “Eat food. Not too much. Mostly plants.” a *New York Times* blog asked participants to come up with their own “Pollanisms.” Among the ingenious entries:

Eat pie. Very good pie. Not often.
Spend time. On useful things. Not this.
Read Pollan. Take his advice. With salt.
Make promises. Don’t break them. Find loopholes.
Seek wisdom. Think for yourself. Avoid maxims.

The winner manages to challenge Pollan’s original edicts and elicit a laugh: Ate plants. A big heap. Still hungry.

And this one from your editor: Eat plants. Always with butter. Or cream.

Growing Wise Kids

EAT YOUR EGGS AND HAVE YOUR CHICKENS, TOO!
MOTIVATION FOR HAVING YOUR OWN BACKYARD FLOCK

By Jen Allbritton, CN

I have long desired to become a homesteader and raise my own food. I want to work the land and enjoy the fruit of my own labor instead of mooching off everyone else's hard work as I have done for so long. But while I revel in my new *Little House on the Prairie* lifestyle, I still want all the suburban luxury. . . at least for the time being. So I did it, I took the first step. We now own five frisky, funny, feathery chickens that live in our semi-rural backyard. I tell myself I did it for the kids, but really I had more selfish motivations.

Chickens are hilarious and make excellent pets. It took some time, but now we can hold our girls, and they come trotting over every time they see us. Of course, they think we have table scraps for them to devour, but I like to think it is because they adore us. So for all you out there who have an itch to do something homestead-ish and who have a little land to spare, let me tell you about raising these fine feathered creatures. They help your gardening efforts, make the most of every scrap of food that goes through your kitchen and bring you and your children hours of enjoyment.

Most important, you should never be egg-less again and may even have enough to give to your family and friends—or better yet, barter for something you need.

REASON #1 TO RAISE BACKYARD CHICKENS: STELLAR NUTRITION

Without a doubt, fresh, pastured eggs are superior in taste and nutrition to conventionally raised commercially available varieties. Eggs have been a highly valued foods since the beginning of time—eggs from chickens, ducks, geese, turtles and fish. Egg yolks are the richest source of two superstar carotenoids—lutein and zeaxan-

thin.¹ Not only are bright yellow yolks loaded with these fat-soluble antioxidant nutrients, they are more bioavailable than those found in vegetables, corn and most supplements.^{2,3} While these nutrients have a reputation of combating macular degeneration^{4,5} and cataracts⁶ and supporting overall healthy vision, they have a long list of other benefits, including protecting the skin from sun damage⁷ and even reducing one's risk of colon⁸ and breast cancer.⁹

Besides providing all eight essential protein-building amino acids, a large whole, fresh egg offers about six to seven grams of protein and five grams of fat (with about 1.5 grams of it saturated), which comes in handy to help in the absorption of all the egg's fat-soluble vitamins. One egg also serves up around 200 milligrams of brain-loving cholesterol and contains the valuable vitamins A, K, E, D, B-complex and minerals iron, phosphorus, potassium and calcium.¹⁰ Choline, another egg-nutrient, is a fatty substance found in every living cell and is a major component of our brain. Additionally, choline helps break up cholesterol deposits by preventing fat and cholesterol from sticking to the arteries.^{10,14} So the bottom line is, don't be chicken about eating eggs, especially the cholesterol-rich yolks!

Compared to the generic supermarket variety, eggs from pastured poultry are a vivid yellow-orange—proof of a richer store of health-enhancing carotenes (more specifically xanthophylls, a natural yellow-orange pigment in green plants and yellow corn).^{11,12} The more carotenes, the darker, deeper orange color the yolk—and the higher the levels of fat-soluble vitamins as well. Expect to find the richest orange colors in the spring, when grass is fresh and bugs are plentiful. Color also fades as the egg ages. Bear in mind, variations will be seen in these differ-

Compared to the generic supermarket variety, egg yolks from pastured poultry are a vivid yellow-orange.

ences due to the breed and age of chickens, their diet (grass, insects, and feed) and the season.

When left to their own scavenger instincts, being the omnivores they are, chickens eat bugs, worms (and even snakes if given the opportunity), grasses and nutritious herbs such as plantain leaves and wilted nettle—both of which boost egg production and yolk hue. While these feathered friends will eat the grain and pellets left in the feed trough, it certainly isn't their ideal food. Remember, chickens are omnivores, not vegetarians as many people assume, meaning they are designed to consume foods from both animal and plant sources. Subjecting chickens to a strictly vegetarian diet prevents them from achieving their ideal health by denying them the nutrients found through scavenging around the farm, barnyard and pasture.

Compared to eggs from conventionally-raised, caged hens, eggs produced by free-roaming and pasture-pecking chickens have more omega-3 fatty acids, vitamin E and vitamin A,¹² along with notably higher amounts of folic acid and vitamin B₁₂.¹³ Direct sunlight also acts as a nutrient and naturally boosts egg production.¹⁴ So get your girls out of doors as much as possible!

REASON #2: MONEY AND TIME SAVINGS

Properly raised pastured chicken eggs are hard to come by. While going the extra mile (sometimes literally) is well worth the effort for procuring this nourishing food, now that I know the ease of pulling them out of the nesting boxes in my own backyard, I can't imagine going back

to my old ways. Not only do I save money on gas and the premium prices per dozen from my farmer, but if I trade my eggs for other goods, I am actually making money for my family! Also, if you get friendly with the organic produce manager at your local health food store, you may be able to score some veggies that are too old for the dinner table, but perfect chicken grub.

Chickens are also an asset to your garden. Chicken manure is high in nitrogen, which is great for soil. The henhouse's bedding makes terrific mulch (be sure to explore the deep litter method for your henhouse). The nitrogen-rich bedding should be allowed to break down and compost for at least a year before it is added to the garden. When allowed to peck and forage in the garden (once seedlings are established as well as after your produce is harvested), the girls will clean up pests, naturally fertilize the soil and mix everything up with their scratching.

With chickens, nothing goes to waste. Chickens need a goodly amount of calcium. One way to provide this is to feed their shells right back to them. Different chicken farmers have their own ways of accomplishing this—some just toss the shells right back to them after the egg is removed, while others dry them in the sun or oven and grind them up so that they don't look like egg shells. One thing to consider: if chickens get comfortable eating eggs they may start to eat what they lay, which would not be good for you and your family's supply.

There is even talk about the use of egg shell powder as a calcium source for humans too. While I haven't gone there yet, I will toss

With
chickens,
nothing goes
to waste.

HOMESTEAD LAYER HEN FEED

This recipe is compliments of Vicki Hunnicut, homesteader in Central Colorado.

7 parts organic wheat (soft white or hard red)	1 part organic quinoa
2 parts whole or cracked organic corn	1 part organic sunflower seeds
2 parts organic kamut	1/2 part flax seeds (soaked and dried)
1 1/2 parts organic sesame seeds	1/2 part kelp granules
1 part organic hulled barley	1/4 part finely ground egg shells
1 part organic millet	Fraction of non-iodized salt
1 part organic oat groats	

Free choice:

Oyster shell and/or chick (granite) grit
Finely crushed egg shell
Raw goat milk and/or whey

Opening
your home
and heart to
animals—be
they dogs,
cats or
egg-laying
chickens—
creates
opportunities
for invaluable
life lessons.

a shell or two into my water kefir brew for the added nutrition. (See the article “Who Needs Soda Pop with These Bodacious Beverages” from the Spring 2008 *Wise Traditions* issue on lacto-fermented beverages for more details.)

Another waste-saving benefit of chickens is their appetite for your kitchen scraps. What better way to use your carrot shavings, cabbage cores, meat and fish leftovers and over-mature veggies from your garden (i.e. cantaloupes, cucumbers and zucchini) than to put them back into your meals via the eggs produced by your pastured chickens? Some of the most gorgeous orange yolks come from “zucchini-fed” chickens. Beware: feeding onions and garlic may make your eggs taste a little “funny!”

REASON #3:

IT’S FUN AND FAIRLY EASY

I say “fairly” easy because everything is relative. For me, the convenience of having eggs at home far outweighs the time driving to the four corners of my home state to find the best eggs from chickens raised with the highest standards. Or, heaven forbid, to be without eggs because of a high demand or low production from the local dairy farm.

There is some work involved. After the initial set up of the fenced-in area, coop and all your feeding and watering supplies, daily maintenance is required. Chickens need fresh water, fresh air, grit (which is stored in their gizzards to help grind up food) and plenty of food—chicken

feed and scraps from your kitchen. Count on giving your girls attention at least twice a day. The girls need to be let out in the morning and then put in for the night so they don’t get eaten by predators. Don’t forget, dusk is when predators are most active. A little alarm clock rings each evening to remind me when to bring in my girls since it is a busy part of the day in my house.

Watching our chickens maneuver and contort their feathered figures in funny ways when dusting themselves has become a favorite pastime. Besides being fun to watch, name, and chase around, chickens make amusing noises. Our pack leader has this crazy “bakawwww” she makes every time we approach, as though she is introducing our presence. Overall, the girls are pretty quiet, which is good news for those of you who have close neighbors. Roosters make most of the noise, but they do not have to reside in your flock unless you want fertilized eggs and be able to raise your own little “peeps.”

REASON #4: IT’S GOOD FOR THE KIDS

Opening your home and heart to animals—be they dogs, cats or egg-laying chickens—creates opportunities for invaluable life lessons. Not only do they learn about daily responsibilities needed to keep these critters kicking, but children will also build a healthy respect and compassion for nature’s creatures and the natural cycle of life. They make us stop and realize that loving others unconditionally is easy and more fun when done with energy! As so eloquently said by Blair, my

FREEZING EGGS FOR THE WINTER

Freezing eggs when your chickens are laying the most will keep up your supply during the winter when the girls slow down their production. Hens molt during this time and their resources are reserved for producing more feathers rather than eggs. Less light during the winter months also influences production, which is why some chicken-raisers use artificial light during to keep up production. However, if left to their own devices, egg production will reduce.

Eggs don’t freeze well in their shell, as the expansion inside causes them to crack. But eggs outside the shell are easily frozen for later use and will stay fresh in the freezer for up to nine months. To freeze the whole egg, break about five eggs (approximately 1 cup) into a bowl and pierce the yolks and stir slowly to mix. Beating too fast may create foam and add air bubbles which will dry out the eggs in the freezer. Also, adding a touch of salt or sugar to the mix will help keep egg yolks closer to their natural consistency. For every two eggs add about 1/8 teaspoon of salt and 1 teaspoon of sugar, depending on what you plan to use them for after they are thawed. Either freeze a group of eggs in a glass container with no more than 1/2 inch head space (be sure to make a note on the outside of how many there are and if there is salt or sugar) or you can pour the stirred eggs into ice cube trays and once frozen store in bags in the freezer.

Egg yolks and whites can be frozen separately. Pierce about six or seven yolks and stir in either 1/4 teaspoon salt or 1 teaspoon sugar and freeze. For the whites, just pour them into your container and seal (again leaving no more than 1/2 inch head space). Leave the frozen whites out at room temperature for half an hour and they will whip up just like fresh.²²

TWO EGG-RRIFIC RECIPES

EGG DROP SOUP

Sauté 3 to 5 chopped green onions and a 1/2 teaspoon or so of freshly grated ginger in some butter or ghee on medium heat in a soup pot. Pour in a quart of homemade chicken broth and turn the temperature to medium high to bring it to a boil. Beat two eggs and pour them into the boiling broth. Salt and pepper to taste and serve. Make this recipe your own by adding other ingredients in the sauté stage, such as garlic, greens, mushrooms, etc. You may also beat in powdered Parmesan cheese with the eggs.

COTTAGE CHEESE EGG CASSEROLE

*6 eggs
1 cup cottage cheese
Seasonings of your choice
1 cup shredded cheese of your choice
Veggies of your choice, chopped or sliced
1/2 teaspoon sea salt*

This versatile recipe never fails in my house. Beat the eggs and add the cottage cheese. Season with any herbs and spices that match your cheese, meat and vegetables of choice. Spread half of the mixture in an 8 by 8 glass baking dish. Top with your chosen fillings, then pour on the rest of the egg mixture. Bake at 350 degrees for 45 to 50 minutes.

Try these variations: add cumin and oregano to the egg mixture, layer with chunky salsa and shredded Monterey Jack cheese; add thyme and marjoram to the egg mixture and layer it with sautéed mushrooms, onions and asparagus and add Gruyère cheese; add garlic (fresh or powdered) in the egg mixture, layer with sautéed onion, shredded zucchini and chopped Italian sausage along with Jack cheese; add basil to the egg mixture and layer with frozen green beans and canned or fresh tomato chunks along with a mix of cheddar and feta cheese.

dear friend, editor and a mother of two, “I would never raise children without raising some kind of animal alongside them. They teach things I could never teach.”

WHERE TO START WITH YOUR BACKYARD FLOCK

A vast number of resources out there can ready you step by step to bring home your feathered friends. You will have plenty of choices for the coop, which includes the chicken run and henhouse, waterers and feeders. You may need to insulate and heat your coop if you live in a really cold area. I live in the snowy mountains of Colorado and a heat lamp works well for us.

The size of the coop will depend on how many girls will suit your family size. The number of eggs you will get from your flock depends on the time of year, the breed of hen, their age and type of feed. Chickens bred to be good egg-layers average five to six eggs a week, but will start to slow down after the second year of life.

Next is the feed. The amount of supplemental feed your girls need will depend on what they find through scavenging and are given in the way

of kitchen scraps. Some sort of feed becomes particularly useful during the winter months. The commercial processed pellets at the feed stores are far from nourishing and have many undesirable additives and ingredients. Soy is a frequent addition, even in rations provided by organic farmers, but actually should be avoided. What's wrong with soy, you ask? To summarize, soy contains phytoestrogens or plant hormones (i.e., isoflavones) that have been found to disrupt endocrine function, negatively affect immunity, contribute to thyroid problems and cause hormonal changes in children (see more details and research references at www.westonaprice.org and in *The Whole Soy Story* by Kaayla Daniel, PhD, CCN). Research clearly demonstrates that soy isoflavones are transferred into the yolk of chickens fed a diet containing a high concentration of soy isoflavones.¹⁵ This simply means you'll add eggs from soy-fed chickens to your list of phytoestrogenic foods to avoid.

Soy is a new addition in chicken feed, as it was certainly not necessary for raising chickens back in the olden days. The crux of the issue is protein. Protein is necessary for healthy birds.

Soy is a new addition in chicken feed, as it was certainly not necessary for raising chickens back in the olden days.

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As the size of a flock increases, so does the percentage of protein needed. So on the small family farm that has five to 25 chickens, protein needs should be met through foraging, scraps and the small amount of feed provided. But raising more chickens than the number that can naturally sustain themselves on a particular plot of land calls for higher protein percentages through feed rations.

Katherine Czapp remembers how her chickens were raised on her family's farm. "We used to have about 18 chickens when I was growing up (including a few roosters) and they only got corn, spelts and oats that we grew and ground for them, oyster shell, and then all sorts of meat-type goodies they found (like insect larva in cow pats, and even the occasional calf placenta!) and pans of warm milk we set out for them and the 18 cats twice a day at milking time. Every day my grandfather would take his sickle and gather plants he knew they loved, (I found out later that nettles are up to 40 percent protein) and then they got all kinds of mixed scraps from two family kitchens and two very large vegetable gardens. They foraged all over the place. Eighteen chickens could meet their protein needs on the scale and variety of our farm. If we had had hundreds of chickens or more (as many farmers do today) they couldn't get what they needed at our scale."

My resourceful friend and part-time homesteader, Vicki Hunnicut, passed on a few invaluable chicken-raising nuggets to me when she helped me start my backyard flock. She de-

veloped a wonderful soy-free chicken feed recipe she has graciously allowed me to share with you (see page 71). She also augments the girls' feed with organic alfalfa to scratch through during the winter so they are getting greens year round.

Another tip she suggests is offering the girls raw or cultured milk daily (they love it) and adding a dash of apple cider vinegar to their water (just about one tablespoon per gallon). The vinegar helps keep their pH in balance and improves nutrient absorption. It also deters algae growth in their water.

Truly, everything else you can easily learn from researching on the internet or books. Here are the resources that have been most useful to me:

www.thecitychicken.com
www.backyardpoultrymag.com
www.themodernhomestead.us
www.backyardchickens.com

The last web resource includes a forum to ask questions of those more experienced and PasturePoultry@yahoo.com is a chat group on Yahoo.com where you can ask questions and read posts.

Two important books on backyard chickens are *Keep Chickens! Tending Small Flocks in Cities, Suburbs, and Other Small Spaces* by Barbara Kilarski and *Story's Guide to Raising Chickens* by Gail Damerow.

The staff at local farm supply stores and mail order hatcheries (such as McMurray Hatchery)



A barred rock hen struts around the pen while Rhode Island reds contemplate entering the henhouse.

are typically very knowledgeable about breeds best suited for particular areas of the country.

HOW TO COOK YOUR EGGS—OR NOT

The idea of eating raw or soft-cooked eggs is of concern to some because of the risk of salmonella; however, the risk is virtually non-existent, especially with the right eggs. Data suggest as few as three eggs per thousand—referring to the commercial variety—are infected with salmonella.¹⁶ So not only is the risk exceedingly low, but this figure is for those fed GMO corn, soy and other unmentionables and without the natural foraging under the sun they were meant to thrive on. Dr. Mercola, DO, explains, “Salmonella infections are usually present only in traditionally raised commercial hens. If you are purchasing your eggs from healthy chickens, this infection risk reduces dramatically. Remember, only sick chickens lay salmonella-contaminated eggs.”¹⁷

Donna Gates, author of *The Body Ecology Diet*, explains that avoiding the dangers of salmonella and other pathogens boils down to the inner ecosystem of the egg-laying chicken and the egg consumer—meaning you. An inner intestinal ecosystem brimming with beneficial microflora combats any harmful pathogens. Same goes for chickens foraging on pasture and feasting on worms, bugs and microflora found in the soil.

On the subject of raw eggs, Sally Fallon writes “. . . it is fine to consume plenty of raw egg yolks, a custom found in many traditional diets, but consumption of raw egg whites on a regular basis can lead to digestive problems. The problem is. . . that raw egg whites contain enzyme inhibitors that can interfere with protein digestion. Whole eggs should be cooked—and it is fine to cook them any way you like them, even scrambled. Beating or whipping eggs does not damage the proteins or cause the cholesterol to oxidize.”¹⁸ Oxidation only occurs when eggs are forced out of tiny holes with high pressure during commercial processing.¹⁹

Donna Gates recommends cooking eggs “softly” to prevent making the protein difficult to digest. She also favors eating eggs without much of the white (two yolks to one whole egg), since many people are sensitive to the protein portion of the egg compared to the yolk. As far

as complementing your eggs, Gates recommends adding alkaline veggies (especially cultured) as well as sea salt to eggs to help balance out their acidic nature (as with all animal foods).²⁰ But if your kids want bacon with their eggs (no-nitrate, of course) that is fine too.

EGGS COMING OUT OF MY EARS!

Never in my wildest dreams did I think I would have an egg surplus. Before our feathered friends found their way into our lives, I was always counting my stash from my farmer to make sure I would not run out and was thoroughly disappointed when I was forced to do with the lesser quality eggs from the store. But now eggs are front and center in my weekly meal plan and my egg-dish repertoire has grown substantially. Here is a quick list of dishes that use a good number of eggs. Some are pretty simple, but it is good to have these ideas on hand for when you have eggs coming out your ears!

- Hardboiled with sea salt or seasoned salt (great snack or send off in a sack lunch or use later in a salad).
- Deviled eggs.
- Bernaise sauce—delicious on meat or fish!
- Hollandaise sauce to pour over eggs Benedict but also over steamed or sautéed veggies (especially broccoli and asparagus), and use what is left over as a mayo substitute.
- Egg salad with chopped red pepper, celery and a sprinkle of crispy nuts.
- Scrambles, omelets and frittatas galore with various flavors—spinach, feta cheese with olives for a Greek flair; diced tomatoes, onions and peppers for a Spanish taste; and onions, pepper, ham and cheese for more of a Western appeal. Really any leftover vegetable or meat will work.
- Fried egg and cheese sandwiches (toasted bread smeared with mayo with a fried egg and perhaps some bacon in the middle).
- Egg drop soup made with a base of homemade chicken broth. (Talk about a healing food!)
- Custard.
- Smoothies.
- French toast.
- Breakfast tacos or huevos rancheros (tostada corn tortilla shell layered with refried beans, chopped lettuce, a fried egg and melted cheese with salsa and sour cream to top).
- Ice cream.
- Egg nog (remember, use just the yolk).
- Egg casseroles, quiches and stratas.
- Pudding—tapioca, bread, rice, etc.
- Macaroons—a great way to use up all those whites!

I bet you never knew raising your own chickens could have so many benefits or be so much fun! Whether you have kids still running around the house or not, these creatures will bring a smile to your face as well as bestow the gift of a wonderfully nourishing, affordable food for your

table. I highly recommend taking the plunge with a few backyard feathered friends! 

Jen Allbritton is a Certified Nutritionist and has been researching and writing on all topics of nutrition for over 10 years. She lives in Colorado with her husband and two sons, and spends lots of time in the kitchen cooking up WAPF-friendly creations. If you have topic suggestions you would like to learn more about, contact her at jen@nourishingconnections.org.

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NEWS AND UPDATES FROM WAPF

LIBRARY AND FILING PROJECT: Our library of almost 4000 volumes is now catalogued and on the shelves, with a huge thanks to Cathy Raymond and Tim Boyd who put in many long hours cataloguing and shelving. For a list of WAPF library books, visit <http://westonaprice.org/wapflibrary/index.html>. We are also putting the finishing touches on the filing of ten file cabinets of notes, papers and clippings, including many interesting and hard-to-find articles on raw milk.

RECORDINGS OF THE RUTGERS RAW MILK SEMINARS: From February 6 through April 7 of this year, Rutgers University hosted public seminars on raw milk, which featured Mark McAfee, president of Organic Pastures Dairy, David Cox, counsel for the Farm-to-Consumer Legal Defense Fund, Dr. Mark Gephart of Wright State University, and Donald W. Schaffner, PhD, food science specialist at Rutgers. A big thank you to Professor Joseph Heckman for organizing these important meetings. Audio recordings of these seminars are now available for a suggested donation of \$25 each. To order the recordings, contact Professor Heckman at heckman@aesop.rutgers.edu.

NEW HOMEOPATHY COLUMN: We are pleased to announce a new series on homeopathy in *Wise Traditions*, by Joette Calabrese, a classical homeopathist from Buffalo, New York. Visit her website at homeopathyworks.com. This column is in keeping with the part of our mission statement that refers to "nurturing therapies." As homeopathy was one of the nontoxic, noninvasive medical paradigms that developed as a reaction to mercury-based "heroic" medicine, it is particularly fitting that we begin the column in this issue.

Food Feature

ACHIEVING CULINARY SUCCESS WITH GRASS-FED BEEF

by Katherine Czapp

Cattle raised and finished on pasture represent a tiny proportion of the beef produced for the table in the United States. Most grass-fed beef producers are family farmers who sell their meat directly to customers, consumers who prefer grass-fed animal products for health and taste reasons (not to mention environmental and animal welfare concerns) that are obvious when 100 percent cattle pasturing is compared to the industrial, confinement feedlot model.

A CHALLENGE FOR THE COOK

As far as the cook is concerned, however, grassfed beef requires understanding another facet of the art of cooking, since by its very nature grassfed beef does not reflect the same standards of uniform production protocols that commercial feedlots strive to create. The industrial model of beef production favors only certain cattle breeds (such as modern Angus and Hereford) that will produce a lot of meat on a compact body in as short a period of time as possible, on the least amount of feed necessary—that is, as cheaply as possible. The subtle qualities of that meat—such as the development of complex flavors or its health benefits—are overlooked. The industry requires only that its product taste “beefy,” and that as a result of enforced immobility and the short life of the animal it is tender and suitable for mostly quick, high-heat cooking methods.

By contrast, there is quite a wide range of variety in grassfed beef, which is noticeable from farm to farm. Broader diversity in any food category means more choice for the diner, something we can be ever thankful for. This variety is in part due to differences in the cattle breeds, and in particular to the genetics of the cattle on each farm. While certain breeds are more suited for meat production, such as the older Angus stock and some of the heritage breeds like the Galloways, Highlands and Devons, a knowledgeable farmer with a good eye who raises a

few beef just for the family and some neighbors can nevertheless choose a properly proportioned Holstein or Jersey from his dairy stock and raise an animal with exceptional meat qualities. It all depends on the care of the well-chosen animal for this purpose.

Forage will also have a great influence on the flavor of the meat, and will produce “stronger” tasting meat than beef produced from a concentrated grain diet thanks to the influences of the odorous constituents, reactive polyunsaturated fatty acids and chlorophyll in the variety of forage plants. The cow’s rumen transforms these elements into terpenes—chemicals related to compounds in herbs and spices—which subtly flavor the meat and fat, especially in a mature animal.

Cattle on pasture will naturally take longer to “finish”—that is, complete growth with adequate intramuscular fat (marbling) and reach the stage for slaughter—which may be from 18 to 30 months (or even more) as compared to as young as 12 to 18 months on average for feedlot animals. Pastured animals will be exercised animals, and therefore generally leaner and with “tougher” meat because of the greater diameter in muscle fibers and amount of connective tissue their exercise induces their bodies to create. This meat also has the very desirable characteristics of juiciness and deep flavor. As Harold McGee sums up in *On Food and Cooking*: “Full-flavored meat comes from animals that have led a full life. . . Life intensifies flavor, and modern meat animals are living less and less.”

Animals raised in confinement are generally slaughtered before reaching adulthood, when muscle growth slows down (and intramuscular fat starts accumulating at a greater rate). The rapid growth of immature animals coupled with little exercise means connective tissue is continually being broken down and restructured, rather than developing into strong cross-links and sheaths as

Full-flavored meat comes from animals that have led a full life.

it does in a mature, active animal grazing on pasture. Rapid growth also means a high level of protein-digesting enzymes is present in the muscles of immature animals, which after slaughter help to tenderize their meat and actually reduce the need for much of an aging process. Shortening the time spent on any aspect of the beef production model is of course music to ears of the industry. The resulting feedlot meat may be yielding, but still fairly lean (young grain-fattened animals will put down a thicker outer coating of fat rather than intramuscularly), not be necessarily juicy, and with a mild flavor in need of saucing.

In other beef-eating countries, however, traditional tastes have been different. “According to a standard French handbook, *Technologie Culinaire* (1995),” states Harold McGee in *On Cooking*, “the meat of an

animal less than two years old is ‘completely insipid,’ while meat ‘at the summit of quality’ comes from a steer three or four years old.”

TWO TYPES OF MEAT

For centuries, people have eaten mature, tough, well-flavored meat—often from draft or dairy animals at the end of productive lives—and created long-cooking, moist, low-heat methods to prepare it. Also for centuries, people have raised animals specifically for the luxury of roasting a tender piece of meat from a young, specially

THE IMPORTANCE OF FAT

When we chew a piece of meat, we perceive it to be tender often based on the presence of fat. Marbling of meat means that the muscle fibers and connective tissue are interrupted by fat cells, which help to weaken the tougher structures. As it cooks, fat melts and lubricates other tissues (which alone tend to dry and stiffen) and individual muscle fibers are pleasingly, unctuously coated. Without a lot of fat, even tender meats (those without connective tissue) can easily shrink, dry out and become tough, making a very finicky meat for the cook to handle properly.

Many farmers raising grass-finished beef are proud of the fact that their meat is so lean, perhaps partially because they, too, fear saturated fat and believe less of it in their animals is a good thing. (The argument that grass-fed beef is better because it contains more omega-3 fatty acids is bogus—cows are ruminants, designed to turn unsaturated fatty acids into saturated fats, and the amount of omega-3 fatty acids in the fat of both grain-fed and grass-fed beef is very small.) It is the ample presence of saturated fats that contributes to the satisfying taste of beef. Fat can compensate, to some degree, for a shortened aging process by contributing that unctuous coating around meat fibers, and as it insulates the meat, is more forgiving to the cook’s recipes and higher temperatures.

Shannon Hayes, in *The Grassfed Gourmet* discusses fat and weight gain in grass-finished beef: “For the meat of beef animals to be tender, they must gain weight at a rate of one to two pounds per day before they’re processed. (In feedlots, a typical gain is three pounds per day.) If the rate of gain is less, the meat will be tough.” She then emphasizes that the cattle must be on lush fields with grass no taller than 6-10 inches. “If the grass is higher than that, then it has probably gone to seed. Once this happens, the energy has gone into the lignan (the woodier plant tissue), and the cattle can no longer digest it efficiently. . . . When pastures are overgrown, the animals will eat only enough to survive—they will not eat to gain weight.”

In what could not be more stark contrast, Joel Salatin recently published an article in the May, 2008 issue of *Acres, USA* called “Tall Grass Mob Stocking” that directly contradicts this approach. By his own admission, Salatin had long proclaimed the same recipe for grassfeeding that Hayes describes above. . . . until unexpected events showed him otherwise.

When delays prevented Salatin from moving his cattle onto a neighboring farm for grazing until summer, it was nearly September before the herd reached the last fields in their grazing rotations. Late season, rank and over grown, “it looked like a wreck from a conventional grazing mindset.” Expecting the cattle to reject the browning grasses that had gone to seed, Salatin was stunned to see them mow down everything in sight—what they didn’t eat was trampled into the soil surface. To Salatin’s great surprise, “The animals looked extraordinarily fat. They possessed a bloom that we were unaccustomed to. We expected them to fall apart. . . . What we got instead was a remarkable performance from the stock and a landscape change nothing short of miraculous.” The key to the cows’ performance lies in bovine dietary requirements: “. . . bovines need starch more than protein. After all, these are walking fermentation vats, and fermentation thrives on sugar. . . . Young, vegetative, succulent grass blades are high in protein and low in carbohydrates, or energy. We follow that principle carefully in selecting corn maturity for good silage fermentation, but generally throw the same concept out the window when it comes to harvesting our forages at their energy peak. That is why I like the corn parallel. It shows easily and graphically the disconnect between how we harvest corn and how we harvest grass for maximum energy. The goal is the same. Both are feeding a fermentation process; one inside the cow and the other outside.”

Autumn is the time to harvest grass-finished beef—this is the lesson we can learn from Salatin’s experience and from the tradition of native peoples who hunted bison on this continent. As summer turns to fall the animals’ natural feeding selection is maturing grasses going to seed, and is the key to the laying down of fat—delicious, satisfying fat—for the winter.

fattened animal spared the usual work of the farmstead. These two methods of meat production and preparation existed side by side until about the time of the Industrial Revolution when draft animals eventually became obsolete, the rise in urban populations led to greater demands for meat, and a mass-scale, centralized means to provide it was developed. Mass production favors immature animals because of its economies of scale—the imperative is to produce the most meat at minimum cost. Commercially raised beef in the U.S. for the last several decades has sacrificed flavor and texture, as well as many important health bonuses, for the specious goal of “greater efficiency” that concentrated grain-feeding appears to provide.

THE TENDERNESS CONTROVERSY

What creates tenderness in beef and what makes meat tough? We’ve mentioned some of the contributing factors, such as breed, type of forage, exercise and age of the animal. There is also the long-held belief that fat marbling is essential for tenderness, but visible marbling may

actually account for a much smaller variation in meat tenderness—as little as 10 percent in some food science estimations—and is not necessarily the best predictor of meat quality. More important factors affecting the tenderness of meat concern the complex interplay of factors that occur around the time of slaughter, and include stress before and at the time of killing, and how the meat is handled after slaughter (the aging process).

Even the tenderest cuts on an animal can end up tough due to stress at the time of slaughter. The most humane methods of slaughter will, fortunately, produce the best results in the meat. Why this is so depends upon understanding the relationship of glycogen and lactic acid to pH decline (rise in acidity) in meat after slaughter. An animal that has not been stressed will have normal levels of stored energy, or glycogen in its body. When the animal is slaughtered and bled, the metabolic processes continue for a time, however there is no longer circulating oxygen. Without the presence of oxygen, the breakdown of glycogen/glucose results in a buildup of lactic acid which then causes a rise in the acidity of the meat. This acidity normally helps retard growth of microorganisms after slaughter, and sets the stage for the aging process to begin properly.

If, on the other hand, the animal has used up its glycogen stores before slaughter because of the trauma of physical crowding, transport stress, rough handling or fear, the pH in the meat may not drop quickly enough after slaughter because not enough lactic acid can be produced. In this case the meat will be very dry, tough and dark in color, and will be more susceptible to spoiling and contamination.

GETTING THE FAT BACK INTO GRASS-FED BEEF

One of the most unfortunate beliefs among proponents of grassfed beef is the notion that grass-fed beef is good because it is lean. Many a consumer has bitten into a lean grass-fed steak or hamburger with great anticipation, only to be sworn off beef altogether because this so-called healthy beef is dry and tasteless.

Many of the benefits of grass-feeding are concentrated in the fat, including fat-soluble vitamins, CLA and minerals. The fat of grass-fed beef is actually more saturated than the fat of grain-fed animals, and this is a good thing, because saturated fat supports a myriad of biochemical processes in the body. After all, if we are imitating the practices of Native Americans, we should surely honor their one food-combining rule: they never ate lean meat. Native Americans hunted fat animals preferentially and saved all the fat from the back, hump and cavity, often throwing excess lean meat away.

Here are some pointers for getting nutritious fat back into grass-fed beef:

- ♦ Encourage your farmer to graze on mature, overgrown pasture with lots of natural seedheads. (See sidebar on page 78.)
- ♦ Be willing to pay the price for meat from older, fatter animals.
- ♦ When ordering beef from your butcher, stipulate that none of the fat be cut off the steaks and roasts. The goal is about one-half inch of fat on a rib roast and around steaks.
- ♦ Stipulate ground beef with 30 percent fat by volume.
- ♦ A layer of fat taken from the back or interior of the animal should be wrapped and tied around lean roasts. (See page 390 of the 1964 edition of *The Joy of Cooking* for guidance.)
- ♦ When stewing cuts of lean meat, layer them with pieces of fat, fatback or bacon, or brown them first in a goodly amount of fat.
- ♦ For lean roasts, use a larding needle to insert small pieces of pork fat throughout the roast.
- ♦ For roasts, make gravy with all the fat that drips into the pan or save and use the fat for frying other foods.
- ♦ When ordering a steak in the restaurant, always insist on seeing the piece of meat before it is prepared, and be willing to choose something else (or even walk out!) if they have committed the crime of limiting patrons to beef that is too lean.

The proper aging of meat is the work of the endogenous enzymes in the muscles as they break down large molecules into smaller, flavorful fragments.

INFLUENCE OF AGING

Very rapid chilling immediately after slaughter causes the muscle fibers to shorten. These tightly contracted muscle bundles resist stretching in the hanging carcass and produce tough meat. In *Everything I Want to Do Is Illegal*, Joel Salatin explains why U.S. government regulations on post-slaughter carcass temperatures are ruining artisan beef production: “When a steer is slaughtered, the muscle tissue releases an enzyme called calpain. This enzyme keeps the fibers from shrinking, or tightening, and instead makes them relax. Activated by calcium and only viable in ambient room temperature, this enzyme works for only a couple of hours after an animal dies. But if the fibers get cold, it shuts down. One of the biggest problems in the grass-finished beef business is tough tissue, which many experts have blamed on insufficient intramuscular fat, or marbling.

“Yet hunters know that very lean venison and elk is tender, with virtually no intramuscular fat. What’s the difference? The difference is that wild game usually stays out at ambient temperature for hours before being chilled. By the time the hunter . . . gets it to refrigeration, the meat has been out for hours, allowing calpain its maximum tenderizing function.

“Under government inspection, however, the regulations require [that] the carcasses must be in the chill room blasted by frigid air within one hour of slaughter. An animal that doesn’t comply is automatically discarded. . . . When one of my grass-finished animals is shoved into a chill room next to one of these [feedlot] fat carcasses, the internal temperature will drop much faster than the next door neighbor with a 200-pound coat of fat. As a result. . . the regulations inherently chill the leaner pasture-finished carcasses down. . . too fast. The faster cooling deactivates the calpain, which stops the tissue relaxation, which creates tough meat.”

PROPER AGING TECHNIQUES

In *Kitchen Mysteries*, Hervé This’s summary of the meat tenderizing process is brief but accurate: “Very fresh meat is tender, but fresh meat is tough; gradually it becomes tender again, then it rots.” For a short period after beef is slaughtered, the meat can immediately be cut and

cooked and will be especially tender. This span of time lasts perhaps two and a half hours, after which the carcass is hung and rigor mortis (the contracting of muscle fibers) sets in, the effects of which will be exacerbated by excess chilling just mentioned. However, going through normal rigor improves meat quality in several ways. The meat texture is firmed up, and the water-holding ability of the meat proteins is enhanced, producing juicier meat.

The flavor and texture of meat benefit greatly from aging after rigor. The proper aging of meat is the work of the endogenous enzymes in the muscles as they break down large molecules into smaller, flavorful fragments. The enzymes need time (two to six weeks, depending on the age of the animal) and temperatures between 34 and 40°F. Nineteenth century meat was aged at room temperature for a period of days to weeks until the outer portion was indeed rotten, in a process the French called mortification.

Meat aging that exposes the carcass to the air (these days temperature- and humidity-controlled) is called dry aging, and in spite of the tremendous contribution that the process confers upon meat quality, the modern meat industry generally avoids it as not cost effective, of course. Trained butchers must monitor the dry-aging process; the meat will lose moisture and weight as it ages and must be carefully trimmed of dried, sometimes moldy or rancid surfaces. The result of proper dry aging, however, is an intensely meaty, buttery or nutty flavor and tender tissue, even from older animals. Farmers who sell grass-finished beef and who are able to fully control the processing of their beef can provide meat that has been properly aged and therefore tender and flavorful.

When meat is aged at all in the commercial industry, a process called wet aging is used, in which the meat is sealed in Cryovac (plastic), and protected from oxygen. It loses no moisture or weight, does not require the skill of a knowledgeable butcher to monitor the process, and while enzymes create some tenderness, the flavor does not develop as in slow, dry aging techniques.

AGING MEAT IN YOUR KITCHEN

You can continue the aging process of meat at home in order to enhance its tenderness and

flavor. In *Cookwise*, Shirley Corriher recommends this method: “Place the unwrapped meat on a rack over a dish that is lined with a paper towel and leave uncovered 2 to 7 days in your refrigerator, which is between 36° and 40° F. [The meat] will turn dark and the surface will dry out. When you are ready to cook, cut away the dried surface area.” I would emphasize that this method will work best with a relatively large piece of meat, such as a roast. Thinner cuts such as steaks would dry out too much unless loosely covered, or consider using a marinade or herb paste.

MARINADES OR HERB PASTES

There is quite a bit of debate about how marinades work to tenderize meat, or even if they can achieve that goal at all. The theory—that acidic ingredients in the marinade break down collagen prior to cooking—has been shown to be only nominally true. Marinades tend to penetrate only a few millimeters into the meat and over marinating produces a gray and mushy (not tender) meat exterior. However, marinades have been used for centuries to prepare meat for cooking, and traditional ingredients have been

acidic liquids such as wine, beer, vinegar, kvas, and cultured milk, with the addition of aromatic herbs that also contain antibiotic oils, such as thyme, marjoram, rosemary, oregano, and garlic and onions. It has been my suspicion that the marinade, while imparting marvelous flavors, really provides a safe environment for the meat to continue its natural aging process.

Hervé This, in *Kitchen Mysteries*, agrees: “Vinegar is an acid that attacks the connective tissue and breaks it down. That is one reason it was thought that the meat gets tender, but not the only reason. From our laboratory experiments, we concluded that meat becomes tender in a marinade because, while it is protected from putrefaction, the muscular fibers age and protein aggregates are slowly dissociated, just as when butchers age meat in their special refrigerators.”

A way to enhance the power of the marinade as a safe aging medium is to be sure to allow enough time for the meat to age in the marinade if keeping the meat in the refrigerator. You can also boost the enzyme activity by marinating at room temperature. A roast can marinate a couple of days in the refrigerator, for example, but take it out the night before the day you’ll cook it and let it marinate at room temperature for that final period. Most meat-aging enzymes will start to denature and lose activity between about 105° and 122°F, but will work faster the closer they come to that range. This means that aging enzymes will also be working as the meat slowly heats up during the cooking itself.

In the case of steaks and thinner cuts of meat, I utilize an herb paste for the same purpose—to allow the meat to age further while slathered with aromatic herbs and raw olive oil. My method for two rib steaks (about

JUICY GROUND BEEF TIPS

Ideally, ground beef tastes best with at least 30 percent fat added in during processing and is worth insisting on when ordering beef from your grass farmer. When working with very lean grassfed ground beef, however, its leanness can be supplemented by lovely rich ingredients in a meat loaf, for example, such as eggs, cream and even anchovies. But if you just want a juicy burger, there are ways to produce a real winner. First, if your meat is frozen, thaw it slowly in the refrigerator rather than taking it out of the freezer an hour before mealtime and plunking it in a pan of water to thaw. The ice crystals in frozen meat pierce the tissues, and in the case of lean meat, juices will leak out making the meat even drier. Meat that is thawed slowly in the refrigerator will retain more juices in the meat.

I bring the meat close to room temperature before I cook it—quite against the standard rules of hygiene—but my aim is to have the meat spend as little time in the frying pan as possible while deliciously browning the outside of the meat and keeping the center rare, but not cold. I season my ground beef very simply with salt and pepper and garlic all pounded into a paste that I mix into the meat by hand. My favorite fat for sautéing ground beef is a mixture of 90 percent tallow with 10 percent beef stock—I keep a supply in the freezer. I heat a heavy cast iron pan to medium-high and add the fat—enough to create a small pool. When it is hot, I add the patties and allow them to brown nicely on the bottom—about a minute—and turn to brown the other side. Frequent turning of the meat cooks the outside nicely—and quite quickly. I turn down the heat to low, turn the patties a few more times and immediately take off the heat and serve. The outside is browned and a bit crusty and glistening from the tasty tallow/stock mixture and the inside is rare and wonderfully juicy.

Earlier this spring a grass farmer we know decided to home-slaughter a few sheep that were six or seven years old. After butchering, the farmer hung the mutton for about 10 days, and then double-ground the meat himself, adding in fat until it “looked right” to his eye. He almost bashfully offered the “ground lamb” for us to try, commenting that he thought it was better than the ground beef from his steers that the processing plant made. This mutton—from elderly animals—was succulent, well-flavored and absolutely delicious—completely due to the fact that our farmer controlled every step of the processing—from the aging period to the addition of fat to the meat, proving it is entirely possible to have well-flavored, juicy and fat grass-finished ground meat.

Many home experiments have proved that the herb paste application produces more tender steaks than meat merely thawed in the refrigerator overnight and promptly cooked the next day.

7-8 ounces each) is to pound 6-7 cloves of garlic in a mortar with fresh thyme, marjoram, pepper corns, a dab of coarse prepared mustard, and a couple of tablespoons of raw olive oil to achieve a paste the consistency of thick mayonnaise. I coat the steaks with this herb paste, cover loosely and refrigerate for 24 to 48 hours. Not only the refrigerator, but your whole kitchen will smell of this wonderful concoction, which is part of the pleasure. I let the steaks finish marinating at room temperature for about eight hours before cooking them over a wood fire. Many home experiments have proved that the herb paste application produces more tender steaks than meat merely thawed in the refrigerator overnight and promptly cooked the next day.

KEYS TO PREPARING GRASSFED BEEF

There are a few basic principles to keep in mind when preparing grassfed beef, and these are primarily dependent upon how long or how well the meat has been aged, the fat content of the meat, and the type of muscle you will be cooking. The cook can decide whether to age the meat further in the kitchen, or to employ a mechanical means to tenderize the meat (more about this later on). Since fat is an insulator and most grassfed beef is fairly lean, the meat will cook more quickly than “conventional” beef almost regardless of the cut, and one must always be aware of this limiting factor. Also, depending on the animal and the age when it was finished, cuts from different animals can vary quite a bit in size, which will of course change their cooking requirements. This means it is less important for you to try to time your recipes than to carefully check on the meat’s progress by monitoring its internal temperature and know when to halt the cooking process. Purchasing a good quality meat thermometer is an excellent way to improve your outcome as you learn just how quickly meats can reach doneness.

An internal temperature of 120° is rare; 125°-130°F medium rare—and most grassfed beef will taste best and be at its juiciest and most tender when cooked to no more than rare or medium rare. Be aware, too, that meat continues to cook even when removed from the heat source. It is wise to stop the cooking just short (10° or so) of your desired temperature.

It will help to become accustomed to using lower oven and stovetop temperatures. A matter of a few degrees and a minute or two can mean the difference between perfectly juicy, tender meat and a dried out, cardboard-like failure for dry heat methods. Very low temperatures used in moist-heat methods give you more leeway, but careful monitoring is still the watchword.

Learn where cuts come from on the animal. Useful charts can be found in numerous cookbooks to help you understand what sort of muscle meat you have and which method (dry or moist heat) will produce the most satisfactory results. If you can imagine a steer grazing on pasture in your mind’s eye, you will see that the parts of the body doing the most work are the neck, shoulders and legs. Chuck, shoulder and blade cuts come from the shoulder portion and are tough as they contain quite a bit of connective tissue that must be cooked long enough to dissolve into gelatin. This is also true for the arm, shank and brisket cuts. All of these cuts will benefit from moist-heat cooking methods, such as gentle stewing, braising and pot roasting.

The parts that “ride” the steer and do the least amount of work are the ribs along the back and the loin area, and represent a limited amount of such tender meat on each animal. Prime rib or rib steaks are cut from this portion, with loin, tenderloin and T-bone cuts following along the back. Dry-heat methods such as frying, broiling or grilling can be used with these cuts, again, always with an eye for the light touch. Sirloin cuts come from the edge of the loin cuts just before the rump, where round, leg and rump cuts are found. These cuts will require careful preparation because even though they contain less connective tissue than the beef shoulder, they also contain less intramuscular fat, and so will be less succulent than properly prepared shoulder cuts.

This recipe for Super-Slow-Roasted Beef from Shannon Hayes’s *Grassfed Gourmet* is an excellent example of careful use of heat to produce a succulent result. Note that the long time spent at very low temperatures means that the aging enzymes in the meat will be working their magic in tenderizing the meat for several hours. I include her useful prefatory comments: “Nothing beats super-slow roasting for turning

even the toughest cuts of meat into wonderful roasts. No matter how lean your roast may be, this technique ensures a beautiful cut of beef that is juicy, pink in the center, and absolutely delicious. And the best part is that overcooking the beef is just about impossible. The meat insulates itself: super-slow roasting dries the outside of the roast and locks in the moisture, enabling the meat to cook in its own juice. The flavor will be extra beefy, but be patient. Super-slow roasting takes a long time. Servings vary, depending on the size of the roast.

*1 beef roast, such as London broil, top,
bottom or eye of the round, or sirloin
Herb rub of your choice*

Rub the roast with the herbs of your choice, wrap loosely in plastic, and allow to sit at room temperature for 2 hours.

Preheat the oven to 250°F

Place the meat in a small roasting pan, insert a meat thermometer, and cook for 30 minutes. Turn the oven heat down as low as you can (most modern ovens do not go below 170°F, but if yours will accurately go as low as 150° or 160°F, so much the better). Continue cooking the meat until the thermometer registers between 120° to 125°F. As a guide, figure about 1 hour and ten minutes per pound of meat at 170°F.

Remove the roast from the oven, tent loosely with foil and let rest for 5 to 10 minutes. Carve into very thin slices to serve.

MECHANICAL TENDERIZING


Besides kitchen-aging of meat, use of marinades and slow, low heat cooking methods, there is also the mechanical approach to tender-

izing meat. This includes pounding meat with a meat hammer, using a larding needle, and using a blade-type tenderizer. Pounding beef briefly, taking care not to cause loss of juices or flattening too much, can be done prior to marinating to help with tissue breakdown.

Larding needles used to be typical kitchen hardware from the time when lean, economical cuts of beef were supplemented with strips of lard or other pork fat products in slow cooked dishes. Piercing the meat with the larding needle itself helps to break apart connective tissue, while the fat insulates lean meat and lubricates and coats it during cooking, adding extra flavor to the meat juices.

Blade-type tenderizers are sometimes recommended by farmers selling grass-finished beef as a means to sever the connective tissue in all sorts of cuts, from steaks to roasts. The Jac-card meat tenderizer is one of these devices, and touted as “the secret” behind the tender steaks at upscale restaurants, where, presumably, the “Prime” beef of the nation ends up. The principle of tenderizing is simple: numerous razor-sharp blades are pressed into the meat against the grain to cut the connective tissue into small sections that will yield to the bite.

HONING A CULINARY ART

Producing and preparing grass-finished beef seems to be a continuous learning experience for all those who choose to participate in this adventure. Like anything that is done well, superior results come from constant investigation, trial and error, and keen attention to the details. We can be grateful to the passionate farmers who enrich our lives with nutritious food. Our reward is in the eating! 

Producing and preparing grass-finished beef seems to be a continuous learning experience for all those who choose to participate in this adventure.

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NAIS Update

2008 MEETING OF THE NATIONAL INSTITUTE FOR ANIMAL AGRICULTURE:
NAIS SLINKS FORWARD
By Karin Beringer

The 2008 annual meeting of the National Institute for Animal Agriculture (NIAA), in Indianapolis, Indiana, April 1st to 3rd, revealed Big Ag's and USDA's plans for implementing the National Animal Identification System (NAIS).

The meeting pointed out a seminal problem with the pro-NAIS community: an inability to comprehend the fact that some people view the world differently, and that those people can and will exert control over Big Ag, and its confinement animal production methods, whether Big Ag likes it or not, based on moral principles. Big Ag's failure to comprehend and respond to ethical challenges is what gives farmers in the sustainable and organic agriculture community the edge—and what can lead us to win against NAIS.

BIG AG'S NEXT ETHICAL CHALLENGE

The first two days of the NIAA meeting focused on the way NIAA members raise and treat livestock and how the animal rights movement is challenging them. Four speakers started off by tracing the history of the animal rights movement and outlining the factors that make it continue to grow. One speaker stated that only 2 percent of the population is truly vegetarian. All the speakers pointed out, though, that the other 98 percent, while eating meat, expect animals to be treated essentially the way they treat their pets.

Charles Arnot, a well known pork industry consultant, spoke about Lawrence Kohlberg's ethical hierarchy and how it applied to livestock handling. Even into the evening after his presentation, the attendees were discussing his speech. Putting aside the fact that Arnot is deeply identified with the vertically integrated pork industry

we abhor, it's interesting to examine his message: the "animal agriculture" industry is missing the animal rights movement message. This message is that ethical decisions are more important than so-called scientific or profit justifications for the industry's methods. I caught him after his speech, and explained I mostly worked with small operators running sustainable or organic operations. Imagine my surprise when he said, "Well, then, they own this issue!"

So what are the animal industry people missing, that we own? And how can it apply to fighting NAIS? Let's look at Kohlberg's ethical hierarchy. Kohlberg proposed six stages of moral development:

1. Naïve moral realism, where your motivation is primarily not getting punished (you steal the cookie and hope not to get caught).
2. Pragmatic morality, where actions are based on maximizing reward, for example, making money, and minimizing negative consequences.
3. Socially shared perspectives—your actions are based on approval or disapproval from others.
4. Social system morality, where actions are based on anticipating formal dishonor and guilt over doing harm to others.
5. You are driven by human rights and social welfare morality—you act based on what you view as the values and rights that ought to exist in society, because you want to maintain community and self-respect.
6. Universal ethical principles—you expect all people to act based on a moral view of all human beings and your actions are determined based on their fairness, equity, and concern for maintaining moral principles.

Big Ag's failure to comprehend and respond to ethical challenges is what gives farmers in the sustainable and organic agriculture community the edge—and what can lead us to win against NAIS.

Arnot added that people who believe that animals are sentient beings then substitute or add in all animals for “human beings” in Kohlberg’s hierarchy, and that the animal rights movement is operating at the sixth level. Animal rights activists believe that doing the “right thing” for animals’ welfare outweighs the fact that animal agriculture’s methods are still legal (level 1) or can be scientifically shown to be healthy.

Most of us would argue those methods aren’t healthy, but what’s interesting here is that Arnot was speaking to his constituency, and they didn’t “get it.” Arnot also posited a theory of “social license” which allows animal agriculture to operate as it has until it breaches these higher-level ethical values held by the larger community. The point of all the speakers together was, “if you don’t recognize the fact that this movement is shaping the way the general populace will require you to operate and voluntarily change your practices, then you will get regulated into it.”

Predictably, during the remainder of the conference, discussion centered on the moral dilemma of confinement agriculture. “How can I continue to operate the way I want, just tweaking

things enough to not be punished?” was the major topic. Back to Level 1 on Kohlberg’s scale!

Meanwhile, small farmers and opponents of confinement agriculture remain at levels 5 and 6. We raise food and buy it based on its ability to nourish ourselves and the land and to minimize harm. We go to bed at night knowing our animals are living as well as they can, as close to how they would live naturally, and still produce food. Some of the things we do to animals—de-horning, for example—might be judged improper by animal rights activists, but in general, the way we raise our animals would meet with approval from many city and suburban dwellers unfamiliar with farm life. As Arnot said, we own that moral high ground, and we should capitalize on it. He recommended farm tours and educating people regularly on how we handle our animals in order to avoid the attacks that are leveled at industrial animal agriculture.

MORAL DILEMMA

So, do these insights apply to fighting NAIS? After witnessing the blind spot on animal rights—the same speakers have been making animal agriculture industry presentations for at least the last five years—it wasn’t a surprise to hear the following comments from state agriculture officials on NAIS:

- “The only problem was how they presented it. They shouldn’t have just jammed it down people’s throats.” In other words, it’s not the program that’s a problem but how you present it.
- “It never occurred to me that people would be against it.” This state-

HOT NEWS IN THE FIGHT AGAINST THE NATIONAL ANIMAL IDENTIFICATION SYSTEM

By Judith McGeary

The fight against NAIS has shifted to a new level! In May, the Farm-to-Consumer Legal Defense Fund issued a Notice of Intent to Sue letter to the USDA and the Michigan Department of Agriculture over the agencies’ illegal implementation of the National Animal Identification System. The 25-page letter describes the history behind the development of NAIS, the reasons why NAIS violates several provisions of federal and Michigan law, and cites the specific provisions of law that have been violated. The arguments range from the environmental impacts of the program, to its economic impacts on small businesses, to the impact on religious freedoms, and also include the complete failure to show that NAIS has any rational relationship to actually addressing the problem of animal disease. Although the Notice of Intent includes some claims that are specific to Michigan, many of the arguments are relevant to the NAIS program nationwide.

The letter requests that all funding, implementation and further development of NAIS immediately halt or appropriate action will be taken, and gives the agencies 30 days to respond. Given the amount of money they have spent already on NAIS, and their continued claims that the program is critical to animal health, it is very unlikely that the agencies will stop implementing NAIS. This Notice is a necessary first step towards filing suit against the USDA. So stay tuned!

You can find out more information by going to www.FarmToConsumer.org or call the Legal Defense Fund at (703) 208-FARM (3276). The Fund will need everyone’s support in its fight against NAIS, so please consider joining the Fund or giving a tax-deductible donation to its sister organization, the Farm-to-Consumer Foundation, www.farmtoconsumer-foundation.org.

Judith McGeary is an attorney and small farmer in Austin, Texas, the Executive Director of the Farm and Ranch Freedom Alliance, and a local chapter leader of WAPF. 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 Quarter Horses, cattle, sheep and heritage breeds of poultry. For more information about NAIS and what you can do to stop it, go to www.farmandranchfreedom.org or call 1-866-687-6452.

ment came from a state official whose NAIS plans for 4H youth have been attacked aggressively.

Anyone who has attended an NIAA conference over the last few years will tell you that participants, including animal agriculture officials from multi-national corporations, state agriculture departments, and the United States Department of Agriculture, (USDA), feel destined to bring forward NAIS. You might think this comes from some higher moral level, such as creating a safe food supply. Instead, I heard things like, “It will make my job easier. You have no idea how hard it is to deal with a disease outbreak.” Back down we go on Kohlberg’s scale —level 2, perhaps? Why? Because there is no moral justification for NAIS. It is impossible to support it and occupy that higher ground.

PROMOTING NAIS

So what do these pragmatists have up their sleeves? How are they going to promote NAIS now? In a final workshop, on the day devoted to NAIS, the attendees bemoaned some of the hurdles they’re facing in getting people to sign up for NAIS. The costs are a problem for some farmers who have found out from anti-NAIS fighters, of course, that it’s not just about a \$2.50 tag. Or, in Wisconsin where registration of farms (“premises registration” in NAIS-terminology) is mandatory, that getting animals registered and tagged (stage 2 of NAIS) and tracked (stage 3 of NAIS) will be a challenge because packers indicate the market for source-verified meat is already met. And, worst of all, said one attendee, there are those pesky “state statutes” blocking state mandatory animal identification programs!

Make no mistake, these people intend to go forward, and aren’t going to let any minor setbacks like state statutes get in their way. What are they going to do if people fighting NAIS continue to succeed? They all admitted that they can get perhaps 70 percent participation voluntarily, but if they want 100 percent participation ... something will have to be done. Their newest tactic is one we’ve been predicting for some time: convert existing disease programs into NAIS-compliant ones. Here are two examples:

- **Scrapie.** Scrapie registrations have always had a farm-based registration, usually a combination of letters that refers to the state and then the farm’s name. The animals’ tags were linked to the farms. Over time, the existing tags will be “converted” to electronic tags, and the farm registrations will be linked to 7-digit NAIS-compliant premises registration numbers. Then, eventually, the old numbering systems will be phased out. This is common knowledge among people in the scrapie program. One of the major manufacturers of the current tags said at the NIAA conference, “I accept that all the tags will be electronic eventually.”
- **Coggins.** The USDA Business Plan to Advance Animal Disease Traceability issued in December 2007 states that by January 2009, horses that require a Coggins test to detect Equine Infectious Anemia should be using the NAIS standard RFID technology. This will be implemented

through “all industry organizations that provide services to horse owners/breeders” (Plan, P. 55).

THE AMS PLAN

The same week as the NIAA conference, USDA announced its Agricultural Marketing Service’s Business Plan to Advance National Animal Identification System (the AMS Plan). The AMS Plan confirmed what many of us have known: participation in any agriculture program will be predicated on participating in NAIS. Perhaps the most egregious of these instances to date occurred when North Carolina farmers, crippled from a drought were forced to register their farms in order to obtain hay from the State of North Carolina.

The AMS Plan outlines how the current Source Verification and USDA Quality System Assess Programs will have their identification requirements converted to NAIS compliant methods. The programs will be required to include a “NAIS Recommendation” in their new applications. The AMS Plan calls for the United Egg Producers to adopt NAIS premises registration as part of their animal welfare program. How tagging chickens improves their welfare is lost on most farmers, but, of course, USDA found some way to claim they’re connected!

The AMS Plan goes on to show other abuses of agriculture programs in the name of NAIS implementation. Check-off funds are to be used to fund premises registration. Feedlots that become part of NAIS will be listed as members of the “National Disease Response Network” which apparently is one of the new NAIS aliases. AMS staff attend meetings of the beef, dairy, egg and pork promotion boards and are to “aggressively educate and inform the Boards regarding NAIS” and “facilitate the Boards’ further promotion of NAIS to producers.”

The AMS Plan lists a variety of ways that our tax dollars can be spent to “encourage” and “ensure” NAIS participation by all livestock producers. You can find the plan, a mere two-pages with a wealth of information, at www.ams.usda.gov/AMSv1.0/getfile?dDocName=STELPRDC5068314


COMBATTING NAIS

To combat NAIS we must meet these people on the level where they operate. We can fight their “I won’t get punished” thinking by challenging their assertions of right. We do this when we ask an official, “Which law, rule, regulation or other basis do you have that allows you to do this?” This tactic is especially important as they attempt to convert existing programs into NAIS-compliant schemes. We can bring lawsuits and work to have their actions declared baseless under the law.

When they declare that their program is scientifically based (“it will improve animal health or food safety”), we must continue to ask for

the studies that prove this assertion. Many activists have asked for those studies. The pro-NAIS forces have been unable to produce even one!

When they say, “it will be more efficient” we must show the real costs of NAIS, the inefficiencies and mislabeling of livestock that have already occurred in Australia and the UK. We must continue to demand a complete cost benefit analysis. We must require them to account for the damage to the environment that NAIS will bring. We can and will address each of their false claims for NAIS.

While we use each of these approaches to fight the specific NAIS battles, we must not lose sight of the moral basis for our fight. We operate on the basis of universal moral principles. Even when shown that the rest of the world puts moral issues above pragmatic approaches, Big Ag can’t hear the message. They will continue to function on the plane they are on, and we must answer them on each specific claim. Our strength is in knowing we’re right. 

ON THE LEGISLATIVE FRONT

By Judith McGearry

While the Farm-to-Consumer Legal Defense Fund is taking the fight against NAIS into the litigation arena, the legislative front continues to heat up as well. We won a victory in the Farm Bill when the conference committee took out Section 10305. That section would have amended the Animal Health Protection Act of 2002 to require the USDA to adopt regulations consistent with the Freedom of Information Act “regarding the disclosure of information submitted by farmers and ranchers who participate in” NAIS. The deletion of Section 10305 means that there is still no mention of the “NAIS” in the Animal Health Protection Act, which USDA claims gives it authority for NAIS, nor indeed is there mention of NAIS in any other Congressional statute.

We have also had some partial victories at the state level. There are now four states with laws rejecting mandatory NAIS! In addition to Arizona and Nebraska, discussed in the last issue of *Wise Traditions*, both Kentucky and Missouri have now adopted laws preventing their agencies from adopting mandatory programs. The Kentucky bill is the first to include a provision explicitly forbidding the agency from using coercive methods to enroll people in a so-called “voluntary” program. The Weston A. Price Foundation, Farm and Ranch Freedom Alliance, and Kentucky Community Farm Alliance, along with many individuals, worked hard to get this important bill passed. The Kentucky law and the Missouri law both also include a provision for people who have already registered to opt out of the program. Although the USDA has stated that people can opt out of NAIS, many state agencies have made the process difficult, which is why the provisions in the state laws are important. If you were one of the people who registered in NAIS and now want out, go to www.libertyark.net/opt_out.html for help on how to get out of the database. You can also find the text of all of these bills on the website. None of the bills is perfect, but they are all important steps forward.

As this issue of *Wise Traditions* goes to press, the fight to get an anti-NAIS bill passed in Illinois is in the final stages. The Illinois Department of Agriculture (IDOA) began the year by requiring children to register in NAIS in order to compete in the state and county fairs and coerced thousands of people into registering with this tactic. Although IDOA has reversed the policy for this year, the threat remains. Illinois HB 5776 would do two things: (1) forbid the IDOA from requiring premises registration or NAIS electronic identification for participating in fairs, unless required by federal law and (2) requires the IDOA to develop a procedure for people to withdraw from NAIS, so that the thousands of people who have already signed up can get back out. Although the bill unanimously passed both the House and the Senate, it is in danger of dying due to politics in the Legislature that have nothing to do with NAIS. Go to the State Updates page at www.FarmAndRanchFreedom.org to find out what happened with this bill.

And, finally, citizens in Colorado continue to fight their state’s requirement that children register in NAIS for the fairs. The Colorado Department of Agriculture is finally going through the rulemaking process, to justify its existing policy of requiring NAIS premises registration for participation in state fairs. A hearing is scheduled for May 30, and Colorado citizens are working hard to keep the rule from being adopted.

Most of the developments discussed in this article are good news in the fight against NAIS. But it is far too early to think that the war has been won! We need people to support the litigation and legislative efforts, and to continue to educate their own communities. Go to the websites listed above for more information on what you can do to help.



A Campaign for *Real Milk*

TESTIMONY BEFORE THE CALIFORNIA SENATE AGRICULTURE
COMMITTEE AND THE SENATE SELECT COMMITTEE
ON FOODBORNE ILLNESS

April 15, 2008

By Sally Fallon

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.

Thank you, Senator Florez, for the opportunity to testify before the joint committees today. My name is Sally Fallon. I am testifying in my capacity as the president of the Weston A. Price Foundation, a nonprofit nutrition education foundation; as the founder of A Campaign for Real Milk, which advocates the consumption of unpasteurized whole milk from pasture-fed cows; and as secretary of the Farm-to-Consumer Legal Defense Fund, which provides legal defense of farms engaged in raw milk production and direct farm-to-consumer sales. Most importantly, I am testifying here today in my capacity as a mother.

And it is as a mother that I will start with three testimonials typical of those we receive almost every day. One comes from a physician who prescribes raw milk to his patients, often with remarkably beneficial effects. One dramatic case involved a nine-month-old boy who had had three ear infections in three months. The child had received a number of formulas based on processed cow's milk and soy protein, and the mother had even tried pasteurized goat milk. With each formula the child suffered recurrent vomiting, diarrhea, failure to gain weight and thrive, and he had been ill with either viral or bacterial infections almost continuously since early infancy. After the mother switched to a formula based on raw goat milk, however, the diarrhea and vomiting ceased and the child began to gain weight. One year later he has normal growth and is perfectly healthy.

The second comes from a Weston A. Price local chapter leader who reported on a two-year-old boy with very serious asthma. After the mother put the boy on raw cow's milk the child went through the entire winter without a

visit to the doctor for any reason and no asthma attacks—except for one, a serious attack that occurred after the boy consumed pasteurized milk while on a family trip.

The third involves an autistic eight-year-old boy who had not spoken a word since the sudden onset of autism at the age of two. After two months on raw cow's milk, all autistic behavior disappeared and the child began to babble as a prelude to speech. The only dietary or treatment change was a switch from pasteurized to raw milk.

Now please imagine the joy and relief that raw milk has given to the families of these children—an end to suffering, an end to worry. Family life can be normal and happy again. It is testimonials like these that make us so passionate about having access to raw milk, and so concerned about the manner in which access to raw milk has been undermined in the state of California with the stealth passage of AB 1735, a law that mandates standards so strict that commercial production of raw milk will become impossible. Our experts here today will testify to the fact that the 10 coliform limit is not only unnecessary for the safety of raw milk, but would actually make raw milk more vulnerable to pathogens.

Make no mistake, those who worked behind the scenes for the passage of this law, and our opponents testifying today, do not want the sickly, asthmatic or autistic child to have access to Nature's perfect healing food. Although couched in terms of public safety, AB 1735 has nothing to do with safety and everything to do with protecting California's annual \$4.5 billion industrial dairy industry, which has to be propped up with an average of \$1.6 billion in subsidies every year.

This is a modern day example of sacrificing our children on the altar of Baal.

The 10 coliform standard is a “test of sterility,” designed not to ensure the cleanliness of a farm but to verify the effectiveness of a processing facility. The Pasteurized Milk Ordinance allows 100,000 coliforms per ml in raw milk from the dairy farm. This 10 coliform standard was not designed to test the cleanliness of a farm, but the effectiveness of the sterilization process at the milk processing plant.

It is inappropriate to use a “test of sterility” on raw milk, which is not a sterile product, but a probiotic product. Non-pathogenic coliforms are what consumers are seeking when they choose a raw milk product. Coliforms protect us against pathogens and produce many important nutrients in the digestive tract. They are our friends, not our enemies, and they are being increasingly used by doctors to treat everything from intestinal problems to wounds. Obviously it is unscientific to claim, as our opponents do, that these same coliforms in milk are dangerous. The medical paradigm has changed; germs are no longer the enemy.

You have, of course heard many arguments painting raw milk as a deadly poison, one that has no health benefits. These arguments can only be made on the basis of extreme bias against raw milk, found in numerous articles published in the scientific literature and on government websites. The committee needs to be aware of the double standard applied to raw milk compared to other foods. The most glaring example of this double standard can be found in the FDA Powerpoint presentation on raw milk prepared by Mr. John Sheehan, posted at realmilk.com.

The Weston A. Price Foundation has presented to the Committee a slide-by-slide response to this document. In it, Mr. Sheehan cites 15 studies to support his statement that “drinking raw milk is like playing Russian roulette with your health.” In analyzing these studies blaming milk for illness, we found that not one of them proved that pasteurization would have prevented the illness. In almost half the studies, Mr. Sheehan misrepresents the conclusions of the study and in fully 80 percent of the studies, there was no valid positive milk sample to implicate raw milk. One-third of the studies ignore other more probable vectors of disease in what constitutes clear examples of bias. In one of the studies, the “outbreak” blamed on raw milk did not even exist. The public deserves better from our public servants.

Lately, we have seen many reports in the media about outbreaks attributed to raw milk. On inspection, we find the same clear pattern of bias, double standard and possibly even fraud regarding these reports. The modus operandi is as follows:

- When testing raw milk, use cultures to promote pathogen multiplication and highly sensitive milk testing techniques that find pathogens in extremely small numbers, levels that would not cause illness. (Any substance you test will show pathogens if the test is sensitive enough.)
- Use new rapid testing techniques developed for the food industry, which tend to find false positives. This method is currently being used in Pennsylvania to harass raw milk dairies, finding pathogens and rescinding

It is inappropriate to use a “test of sterility” on raw milk, which is not a sterile product, but a probiotic product.

RAW MILK AND THE FDA

The US Food and Drug Administration (FDA) is becoming an increasing threat to raw milk consumers and their freedom of food choice. Because FDA's warnings on the dangers of consuming raw milk are not having as great an impact on consumer demand as they once did, the agency is now making a more concerted effort to stop the supply of raw milk, thus effectively denying consumer freedom of choice. An aide to Congressman Ron Paul was told earlier in the year by a congressional liaison for FDA that raw milk is a “high priority” with the agency—this while recalls of industrial food products continue unabated and over 100,000 people a year die from “properly” prescribed pharmaceutical drugs. Whether through making criminal referrals to US Attorneys or pushing state departments of agriculture to take action against the distribution of raw milk, the agency is pressing its agenda. In written testimony submitted to the Health and Government Operations Committee of the Maryland House of Delegates on March 15, 2007, John F. Sheehan (Director of FDA's Division of Plant and Dairy Food Safety) stated, “Raw milk should not be consumed by anyone, at any time, for any reason.” FDA would like to impose this belief on us all.

The committee needs to be aware of the double standard applied to raw milk compared to other foods.

- licences with independent tests come back negative and no one is getting sick.
- When there is an outbreak, use food questionnaires that leave out likely vectors of disease but always include raw milk. In a recent outbreak in Pennsylvania, one member who got sick reported receiving a call from the health department. The department wanted to know whether she had drunk raw milk. She replied that she hadn't but that she suspected undercooked chicken from a local restaurant. But once she replied negatively to the question on raw milk, the department was not interested in pursuing the questioning further, not interested in tracking down the chicken.
- When there is an outbreak, test raw milk products first, and test them in the home setting rather than from the shelf. If a person is infected and has handled a raw milk product, the product will test positive for the organism. Omit testing other foods or raw milk products on the shelf (not handled by the consumer) but report a positive lab result for the raw milk product. This method has been used to implicate Mexican style raw milk cheese in numerous reports.
- Omit subjects who got sick but did not drink raw milk. The 2001 Wisconsin outbreak cited on the CDC website is a good example of this. People who got sick but did not drink raw milk were not admitted to the hospital

CALIFORNIA & OPDC FEDERAL GRAND JURY INVESTIGATION

One example of FDA's now more active role against raw milk can be seen in the agency's activities carried out in California. In 2004 from April 5-9, FDA conducted an inspection of Organic Pastures Dairy Corporation (OPDC) in Fresno, California. Through that inspection and the subsequent investigation, the agency determined that OPDC was distributing unpasteurized milk and milk products in interstate commerce for human consumption. On February 24, 2005, the agency sent a warning letter to Mark McAfee (CEO of OPDC) warning him that such distribution was in violation of federal law [21 CFR 1240.61]. The law prohibits unpasteurized milk and milk products in final package form in interstate commerce for human consumption; however, there is no prohibition on raw pet dairy products in interstate commerce. McAfee responded to the warning letter by sending the agency a copy of the labels he intended to affix to unpasteurized dairy products shipped in interstate commerce. The labels indicated that the products were for "cat or dog food only." The agency answered McAfee's response by referring him to an FDA guidance document on marketing a pet food product. The document stated that "there is no requirement that pet food products have premarket approval by FDA." The agency had no other response to the labels McAfee submitted; in effect FDA gave its tacit approval for OPDC to proceed with shipping raw dairy products in interstate commerce with the new labels. FDA did not tell OPDC that the company must drop all out-of-state customers known to be purchasing for human consumption nor did it tell OPDC to verify whether future customers were purchasing for pet consumption only. Nor did FDA tell the dairy that it would be violating the law if it sold product labeled for pet consumption to out-of-state customers when it had knowledge that those customers would be using it instead for human consumption.

On March 19, 2008 (more than three years after responding to FDA's warning letter), Mark discovered that OPDC was the subject of a federal grand jury investigation, an investigation instigated by FDA and centered primarily on the company's sale of raw pet dairy products in interstate commerce. On that day, two OPDC employees, who had earlier received subpoenas to testify before a US District Court grand jury in Fresno, were paid a visit at their homes by two FDA special agents from the agency's Office of Criminal Investigations. The agents questioned the employees about the dairy's sale of raw milk and colostrum in interstate commerce (colostrum can legally be sold in interstate commerce as a dietary supplement for human consumption). The agents asked one of the employees to wear a wire; the employee refused.

Mark responded to the news of the investigation by contacting David Gumpert who, in turn, posted a story about the grand jury investigation on his blog (www.thecompletepatient.com), "Of Nighttime Agent Visits, Phone Tapes, and Secret Wires: Now OPDC Is Target of a Grand Jury Investigation into Raw Milk" (March 20, 2008). Shortly thereafter, Mark's attorneys contacted the US Attorney's office in Fresno offering to share documents and other exculpatory evidence in an attempt to dissuade the US Attorney from continuing the grand jury investigation. Apparently in response to the offer, the US Attorney cancelled the grand jury testimony of the two employees and temporarily suspended the proceedings of the grand jury. As of this time, the grand jury remains suspended.

It appears that FDA is trying to have Mark prosecuted for misbranding under the Federal Food, Drug and Cosmetic Act. "Misbranding," in this case under FDA's apparent interpretation of the law, would be knowingly selling products for human consumption that were labeled for pet consumption only. What is unjust about FDA's action is that in 2005, it made it apparent to McAfee that he was in compliance with the law as long as he labeled his products for pet food only.

and did not become part of the official record.

- Ignore equally likely or more likely sources of infection, such as visit to a farm or petting zoo, tap water or other foods.
- Assume that statistical association constitutes proof. It is easy to create a statistical association with raw milk using the above techniques.
- Issue inflammatory press releases against raw milk, which are not retracted but left on government websites when the dairy is exonerated.



The industry has used these techniques to make raw milk the whipping boy for outbreaks caused by other foods. It is clear that in recent months government agencies are making a well-coordinated effort to blame some of their

most serious problems, such as listeria and *E. coli* O157:H7, on raw milk. The fact that only raw milk was quarantined during the 2006 California *E. coli* outbreak attributed to spinach is an excellent example of these biased tactics.

Meanwhile, problems with pasteurized milk tend to be glossed over or underreported. Recently three people died from listeria in pasteurized milk in Massachusetts. On February 24, 2006, Wal-Mart in Vidalia, Georgia pulled pasteurized milk from shelves due to foul odor. At least one child was seriously sick, a fact that

was not reported in news releases. A voluntary recall was announced three days later—there was no sense of urgency. In fact, Wal-Mart was applauded by Commissioner Tommy Irvin. There were no government recalls, no warnings to the public to avoid drinking pasteurized milk. More of the double standard. In 2006 pasteurized milk caused illness in 1300 inmates in 11 Cali-

fornia state prisons, yet we heard no outcry to remove this dangerous product from the market.

Another example of the double standard comes from the Centers for Disease Control (CDC) website, which warns against raw milk as a source of salmonella. Yet a few points later the same document states that unpasteurized milk (in the form of breast milk) is the safest food for infants and that raw breast milk prevents many health problems, including infection by

salmonella. Everything that we have learned about the health benefits, immune support, probiotic qualities and anti-pathogenic components of raw human milk over the last 40 years applies equally to the raw milk of other species. Studies showing that babies given pasteurized breast milk have more infections, more health problems and do not grow as well compared to raw breast milk apply equally to the milk from other species.

The FDA calls drinking raw milk “risky behavior.” A 1999 FDA survey involving 19,356

Problems with pasteurized milk tend to be glossed over or underreported. Recently three people died from listeria in pasteurized milk in Massachusetts.

RAW DAIRY PRODUCTS IN NEVADA

Thanks to the work of the indefatigable Bari Caine, now a chapter leader in Reno, legal forms of raw dairy products are now available at Wild Oats stores and Whole Foods in Las Vegas. The Organic Pastures products include raw colostrum, “Superlite Raw Colostrum,” composed of 95 percent raw milk and 5 percent colostrum, raw “Quefor,” kombucha and raw cheddar cheese. The Organic Pastures truck can drop shipments to groups at reduced prices. For further information, contact Organic Pastures at 877-729-6455.

adults in eight states found that 50 percent consumed uncooked eggs, 20 percent consumed pink hamburgers, 8 percent consumed raw oysters, while a mere 1 percent consumed raw milk. A 2008 study of 4548 young college students reported that 53 percent consumed raw cookie dough, 33 percent consumed eggs with runny yolks, 29 percent consumed raw sprouts, 11 percent consumed raw oysters, clams or mussels, and 7 percent consumed rare hamburger. The study did not report raw milk consumption. Yes none of the common “risky behaviors” has prominence on FDA’s website for food safety—only raw milk is singled out—and there are no pasteuriza-



At the California Senate hearings on raw milk, San Francisco consumer Christine Chessem, Mark McAfee of Organic Pastures Dairy, Michael Schmidt of Glencolton Farm in Canada and Collette Cassidy of Claravale Dairy stand behind Senator Dean Florez.

tion requirement for common “risky behavior” foods.

Government officials also insist that raw provides no health benefits compared to pasteurized and ultrapasteurized milk. (It should be pointed out that most milk today is ultrapasteurized, a process that rapidly takes the fragile milk proteins to a temperature well above the boiling point.) The evidence for the superior health benefits of raw milk comes in the form of scientific studies published in peer reviewed journals, and it corroborates the hundreds of testimonials that we have received on the benefits

THE CALIFORNIA AB1735 COLIFORM STANDARD

The fight to overturn the coliform count requirement imposed by Assembly Bill 1735 [see *Wise Traditions*, Winter 2007 and Spring 2008 issues] continues in the courts and in the legislature. At this time, the best chance for success appears to be in the legislature. First, a recap of what has been happening in the courts.

On March 6, Attorney Gary Cox filed for a temporary restraining order (TRO) and a preliminary injunction in San Benito Superior Court on behalf of OPDC and Claravale Dairy to prevent the California Department of Food and Agriculture (CDFA) from enforcing the coliform standard (the standard calls for suspension of a product’s sales when three out of five consecutive tests for that product exceed a coliform count of 10 in the final container). Judge Harry J. Tobias granted the TRO on March 19 in favor of the dairies, prohibiting CDFA from enforcing the coliform standard while allowing the agency to continue to collect and test milk samples from the dairies. In winning the TRO, Gary was able to convince the judge that both dairies would go out of business if the coliform standard were enforced and that the standard was not rationally related to the safety of the milk.

The next step in the judicial process was for Judge Tobias to rule on whether to convert the TRO to a preliminary injunction. Hearings were held on this issue April 25 and May 23. At the conclusion of the May 23 hearing, the judge denied the dairies a preliminary injunction, essentially reversing his earlier position and holding that the coliform standard had a rational basis in law. In making his ruling, the judge added that he was not convinced the plaintiffs would prevail at trial (the trial would be for a permanent injunction) and “from the plaintiffs’ standpoint they should be dealing with their political representatives for legislative modification.” Gary has said that he will appeal the judge’s denial of the preliminary injunction to an appellate court. Until a ruling is made on the appeal, the TRO will remain in effect.

On the legislative front the prospects for repealing the coliform requirement of AB1735 are more encouraging. On April 15 the California Senate Agriculture Committee and the Select Committee on Foodborne Illness held a public hearing in Sacramento on raw milk safety. The committees heard testimony from consumers and also from panels of experts (both pro and con on the AB1735 coliform standard), including Dr. Ted Beals, a pathologist from Michigan and Dr. Ron Hull, a microbiologist from Australia, who testified on the inherent safety of raw milk and stated that the 10 coliform limit was merely a marker for successful pasteurization and not an appropriate test for raw milk safety. Neither CDFA nor FDA sent representatives to testify at the hearing. Senator Dean Florez, Chairman of the Senate Agriculture Committee, indicated that he favored a more relaxed coliform requirement but wanted each licensed raw milk dairy to develop its own HACCP plan (Hazard Analysis of Critical Control Points) to ensure the safety and cleanliness of the raw milk.

Florez appointed a Blue Ribbon panel, comprised of both supporters and opponents of the current coliform standard, to draft legislation that would supplant AB1735. The panel’s work has given rise to SB201, emergency legislation sponsored by Senators Florez and Don Parata. SB201 would eliminate the 10 coliform standard while instituting twice-weekly testing for pathogens. Under the bill, each licensed raw milk dairy will be required to devise its own HACCP plan.

of raw milk from young and old, some of which you will hear today. Opponents of raw milk are uniformly condescending towards individual testimonials, dismissing them as anecdotal. Yet for the individuals and families involved, these testimonials are pure science—objective conclusions drawn from before-and-after observation of conditions incumbent on a single variable, the addition of raw milk to the diet.

The second document presented to the Committee is a Powerpoint presentation prepared by the Weston A. Price Foundation, which addresses the safety, health benefits and economic considerations of raw milk (posted at realmilk.com). This document is fully referenced and contains all the scientific studies that we know about. In it we provide the math for that sixty-four-thousand-dollar question—what is the safety record of raw milk versus pasteurized and versus other foods on a per-serving basis? The Centers for Disease Control estimates that on a per-serving basis, one is ten times more likely to become ill from *Listeria monocytogenes* by



Liz Reitzig (left), Bowie, Maryland chapter leader and president of the Maryland Independent Farmers and Consumers Association (MICFA) with Mark McAfee of Organic Pastures Dairy, Sally Fallon and Michael Schmidt of Canada at the California Senate hearings in April.

eating deli meats than from consuming raw milk—and this estimate is based on the exaggerated and biased reports mentioned earlier, which blame raw milk but do not prove that it caused an illness. Here we have yet another example

of the double standard applied to raw milk. Where are the FDA's charges that deli meats are "inherently dangerous and should not be consumed?" Where is the FDA's exhortation to "everyone charged with protecting the public health" to prevent the sale of deli meats to consumers?

By our calculations, pasteurized milk is 1.1 to 15.3 times more dangerous than raw milk on a per-serving basis. Even using government statistics that inflate the danger of raw milk, it is easy to calculate that one is over 2000 times more likely, on a per-serving basis, to contract illness from other foods than from raw milk. In fact, the only way to reduce the risk of food borne illness to zero is to stop eating and die of starvation. . . or to consume raw milk on a regular basis to ensure immunity to pathogens.

Our Powerpoint presentation details the

Everything that we have learned about the health benefits, immune support, probiotic qualities and anti-pathogenic components of raw human milk over the last 40 years applies equally to the raw milk of other species.

NEW YORK: THE MEADOWSWEET DAIRY CASE

The hearing on Meadowsweet Dairy LLC's petition for a permanent injunction against the New York Department of Agriculture and Markets (NYDAM) should be taking place sometime this summer in the Albany County Supreme Court [see *Wise Traditions*, Winter 2007 and Spring 2008 issues for background on this case]. The LLC's shareholders are asking the court to rule that NYDAM has no jurisdiction over the distribution of raw dairy products to the shareholders and that the agency should be prohibited from interfering with the LLC's operations.

On March 10, Judge Egan of the Albany County Supreme Court stayed a motion by NYDAM to show cause why the Smiths should not be held in contempt of court for refusing to unlock the doors of the production facility on their farm when the inspectors from the department were executing a warrant to search the Smiths' premises. Judge Egan, who will be hearing the LLC's suit for the injunction, ruled that he will only consider the show cause motion if he determines at that hearing that NYDAM does have jurisdiction over the LLC's distribution of raw dairy products.

In response to the Meadowsweet case, legislation has been introduced into both the New York Senate (S06827) and Assembly (A10870) that would legalize the sale of raw milk off the farm premises (texts of the bills can be found at www.assembly.state.ny.us/leg/). The reason the Smiths had dropped their retail raw milk license was that under it they could sell raw milk only on the farm, depriving them of customers who would not travel to their location to pick it up. The bills, if passed into the law, would put Meadowsweet Dairy under NYDAM's jurisdiction regardless of how Judge Egan rules. Both bills state that "every person engaged in the production of raw, untreated milk for human consumption shall hold a permit issued by the commissioner."

health benefits of raw milk in studies going back over 80 years. Raw milk is superior to pasteurized milk in building strong bones, preventing tooth decay, supporting normal growth and development, preventing asthma and allergies and providing protection against infectious and chronic disease.

The latest study comes from Europe, where investigators found, in a study of 14,893 children aged 5-13, that consumption of raw milk was the strongest factor for reducing the risk of asthma and allergy, whether the children lived on a farm or not. The benefits were greatest when consumption of raw milk began during the first year of life. About five million children in the US are afflicted with asthma and 5,500 people die from asthma each year. About 1250 people in the US die from food-borne pathogens from *all* sources with virtually no deaths from raw milk. Thus, the risk of dying from asthma is over four times greater than the risk of dying from food-borne pathogens from all sources, and infinitely greater than the risk of dying from raw milk. Yet defenders of the dairy in-



Protesters at the hearing for raw milk dairy farmer Mark Nolt, organized by Gettysburg chapter leader Maureen Diaz and Kimberly Hartke, WAPF public relations pro, who saw to it that the event was publicized in 17 newspapers, two national magazines, five television newscasts and over 50 internet blogs.

dustry insist that children should not have the right to consume raw milk, even hinting that parents who love their children enough to give them raw milk are guilty of child abuse.

Our opponents today will insist that raw milk is inherently dangerous and that there is no way to make it safe. These arguments are based on 40-year-old science and a discredited medical paradigm. Raw milk is inherently safe, safer than any other food, and we have

the technology and knowledge today to get safe raw milk to children in every part of the country. Our opponents will insist that raw milk has no health benefits compared to pasteurized. They will omit mention of the many studies which show that pasteurization destroys the vital qualities of milk, reduces nutrient assimilation,

THE MICHAEL SCHMIDT CASE IN CANADA

The May 23 trial of Durham dairy farmer Michael Schmidt has been postponed. Schmidt is charged with twenty violations of the Ontario Health Promotion Protection Act and the Ontario Milk Act. On November 21, 2006, officials from the Ontario Ministry of Natural Resources and the Grey-Bruce County Health Unit raided Schmidt's farm, seizing thousands of dollars worth of products, supplies and equipment. The raid gave rise to charges that stem from Schmidt's operation of a herd share program and the distribution of raw milk and raw milk products to his shareholders.

The decision to postpone the trial was made following a pre-trial hearing involving Schmidt, prosecutors and the justice of the peace who is scheduled to preside over the trial. Schmidt is optimistic that the dialogue begun at the pre-trial hearing may lead to a settlement between himself and the province or, at the least, clarify the issues to be presented at trial. In addition, he believes that the Ministry of Natural Resources has indicated to him that it is now willing to return processing equipment that had been seized in the 2006 raid.

Schmidt plans to represent himself at the trial. The justice of the peace has asked Schmidt to work together with the prosecution to reach a consensus on the facts of the case. The farmer believes the trial will bring into focus the clash between the freedom of the individual's right to freedom of choice and the government's regulatory responsibility to protect the public health. In agreeing to work with the prosecution to reach an agreement on the facts of the case, Michael said "they [the prosecution] cannot change the law, but we can work together to present the case in a manner that it will be possible to get to the core of the argument, which will eventually bring about change."

The farmer is also facing a separate trial for contempt for violating an order issued by an Ontario Superior Court prohibiting Schmidt from distributing raw milk within the regional municipality of York; no date for this trial had been set. Schmidt is encouraging his supporters to continue a letter writing campaign to challenge those having "the last word as authorities in the field of food safety and health." In the farmer's own words, "this battle for individual rights, for individual freedoms and against the abuse of power of so-called experts, politicians and bureaucrats becomes so defining in the years ahead of us. It is paramount to recognize the power within which will allow change to happen. We are not powerless." (See quotes from "Raw milk activist says 'dialogue' starts" in *Owen Sound Sun Times* (3/20/08).)

THE MARK NOLT CASE IN PENNSYLVANIA

Pennsylvania Department of Agriculture (PDA) officials (including Bill Chirdon, Director of PDA's Bureau of Food Safety and Laboratory Services) and state police raided the farm of Newville dairyman Mark Nolt on April 25, arresting Nolt and seizing up to \$50,000 worth of product, supplies and equipment. Mark was taken to a hearing before a magisterial district judge in Mount Holly Springs where he was charged with five counts of selling raw milk without a permit. After the hearing, Mark was released, returning to his farm on foot rather than accepting a ride in a police car.

The state's treatment of Mark and the peaceful gathering of onlookers was a disgrace. At one time there were six state police cars on the premises. When Mark tried to ask a policeman what the state's authority was for being on his property, the policeman kept cutting him off as if he were trying to provoke a confrontation. The police threatened to arrest anyone who set foot onto Mark's property, even denying access to Mark's father and brother who live on the same lane.

In executing the search warrant, PDA seized items they were not authorized to take. The warrant stated that the agency was to seize only equipment used to bottle or package milk and products manufactured from milk. PDA ignored the warrant, taking parts to a cream separator and pieces of cheesemaking implements.

In applying for the warrant, Chirdon also ignored the department's own conditions for seizure recently set forth in a PDA guidance document entitled "Permits Allowing the Sale of Raw Milk for Human Consumption" (dated March 20, 2008). According to the document, PDA is only to seize raw milk and raw milk products when, in the opinion of the Secretary of the department, the products are either "considered unsafe or a menace to public health." There was no allegation in Chirdon's application that any product produced by Mark was unsafe. The agency had tried unsuccessfully in the past to link Mark's products to foodborne illness.

On May 5 Mark had a hearing in Mount Holly Springs in connection with the five citations for selling raw milk without a permit. The magistrate found him guilty on four of the five counts, fining him \$4300. Mark indicated that he planned to appeal the fine. Unfortunately, this was not the end of Mark's troubles.

In an appearance April 30 before a magistrate at the Newville Magisterial District Court, Mark was informed by the judge that he was facing two additional charges for selling raw milk without a permit. A hearing has been scheduled for June 3 in Newville. Mark has also been informed that there are an additional three citations pending against him for selling raw milk without a permit.

It is possible that the FDA may also take action. Two FDA officials were present at Mark's May 5 hearing. In August 2007, the agency sent Mark a warning letter informing him that he was selling unpasteurized milk and milk products in interstate commerce for human consumption in violation of 21 CFR 1240.61.

Efforts have been made to help Mark, his wife Maryann and their eight children. The Farm-to-Consumer Foundation has donated money to Mark. In addition, a June 21 fundraiser has been planned for them (see details at www.westonaprice.org/calendar/MarkNoltWebInvite.pdf).

The April 25 raid was the second time PDA executed a seizure against Mark. On August 10, 2007, the agency took over \$25,000 of product, supplies and equipment, executing the seizure shortly after the Commonwealth Court found Mark in contempt for violating an injunction prohibiting him from selling raw milk and raw milk products without a permit. Since dropping his raw milk permit in 2006, Mark has contended that he was not subject to the state licensing requirement because he is exercising his right to sell via private contract to his customers.

Mark is considering becoming a member of both CARE (Community Alliance for Responsible Eco-farming) and the Farm-to-Consumer Legal Defense Fund (FTCLDF), but as of this writing he had not yet joined either organization.

For the latest developments on the cases covered in this update, 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.

While Mark battles it out in the courts, two bills are working their way through the Pennsylvania legislature. One would require the Department of Agriculture to expand the raw milk permitting process to allow the sale of any dairy product made from raw milk including butter, "soft" cheese, ice cream, yogurt, etc. Currently these products are not allowed even though they are in great demand. The second bill takes a different approach to the same matter by requiring the department to issue permits for the sale of raw milk and products made from raw milk by members of certain entities registered with the department. Those entities would then be responsible for their own inspection and testing under guidelines approved by the Pennsylvania Department of Agriculture.

and renders it allergenic and difficult to digest. In response to this attitude I quote Sinclair Lewis: “It is very difficult to get a man to understand something when his salary depends on not understanding it.”

A final argument against raw milk goes like this: If raw milk results in an outbreak, this would cause people to stop drinking milk altogether and adversely affect the whole milk industry. I hope your intelligence is not insulted with such an argument today. The industry does its best to publicize any

possible problem caused by raw milk in an effort to staunch the declining sales of pasteurized and ultrapasteurized milk, a product that fewer and



Amish farmers gather outside the May 6 hearing for raw milk dairy farmer Glen Wise, who ably defended himself.

have the knowledge and technology today to get safe raw milk to every child who needs it and we ask that you work with us, not against us, to achieve this important goal. ☺☺

fewer consumers can tolerate.

In summary, I urge the joint committee to work towards overturning AB 1735 and doing everything in its power to support raw milk in California. Opposition to raw milk is illogical, it is unscientific, it is expensive, it is heartless and cruel. The child who benefits from raw milk—perhaps even whose life is saved by raw milk—may be your own child, or your own grandchild, or even a child or grandchild of our opponents—our efforts are dedicated to all children. We

THE GLEN WISE CASE IN PENNSYLVANIA

Pennsylvania dairy farmer Glen Wise has also been charged with selling raw milk without a permit. Unlike Mark Nolt, Elizabethtown dairy farmer Glen Wise is a member of the private milk club CARE (Community Alliance for Responsible Eco-farming). Glen sells raw dairy products to CARE members only. Since last fall, there appeared to be a truce between CARE and PDA. Last October PDA suspended an action attempting to convict Bird-In-Hand dairy farmer Levi Miller on the charge of offering to sell raw milk without a permit. Since that time, the agency had not taken any other action against CARE farmers until April of this year when Glen received three citations for selling raw milk without a permit.

Glen’s hearing was held on May 6. Glen acted as his own attorney and did an excellent job, getting two of the three citations dropped and the fine on the third citation reduced to from \$300 to \$50.

PDA’s main witness at the hearing was Joe Goetz, an employee of the department’s Bureau of Food Safety and Laboratory Services. Goetz testified that he purchased raw dairy products from Glen on three occasions (November 14, January 8 and March 8). On cross-examination Glen elicited testimony from Goetz that the PDA employee was a CARE member and that he had signed the CARE contract. Clause 7 of the CARE member contract reads as follows: “P.C.M (private CARE member) certifies under penalty of perjury that he/she is not a government agent, informant, contractor or other party that is trying to entrap or hurt P.F. (private farmer) or his farm in any way. P.C.M. shall hold P.F. harmless and shall indemnify him from any and all losses, costs, claims, damages, actions, causes of action, demands or liabilities including reasonable attorney’s fees, arising in any way whatsoever out of this Agreement.”

Since taking over as chief of the Bureau of Food Safety and Laboratory Services, Chirdon has frequently resorted to the tactic of having undercover agents purchase raw dairy products from unlicensed farmers. PDA agents have purchased products from Mark Nolt on at least ten different occasions and from Glen at least four times as well. Contrast this with Chirdon’s predecessor Bobby McLean who regarded the CARE farmers as not being under PDA’s jurisdiction, leaving them alone.

Shortly after his hearing, Glen received a fourth citation from PDA. The citation was for the alleged sale of raw milk at a farmers’ market on September 15, 2007. In October 2007 Chirdon gave Glen a license application encouraging him to obtain a retail raw milk permit. This latest citation raises two questions: (1) why Glen received this citation after the others when the other citations concerned alleged violations occurring at times after September 15; and (2) why PDA issued a citation for an alleged violation occurring a month before giving the farmer a license application. It appears that this latest citation was issued out of vindictiveness for Glen’s success at the May 6 hearing.

Healthy Baby Gallery



Happy, healthy, eight-month-old Lily Golish has a very sunny disposition. Her mom drank raw milk and followed a WAPF diet as best as she could through pregnancy and while nursing. Lily surprised her doctor by going from 6 pounds 9 ounces at birth to 7 pounds 11 ounces in nine days, a time period in which most babies lose weight, thanks to the high quality of Mom's breast milk. Lily now eats a little egg yolk, liver, beef stock and cod liver oil but mostly still nurses.



Sophia Marie Lemaire McCormick pictured at four months, was over nine pounds at birth. Her mother followed a wise traditions diet, and naturally conceived at 42 years old. She consumed raw milk and cod liver oil during pregnancy and reports that Sophia is a very inquisitive, happy, bright-eyed baby, who nurses well. Her first food will be egg yolk!



LEFT: Forced to eat organ meats and take cod liver oil as a child, this former Weston Price baby still loves his mommy!

BELOW: Alaina Nancy joined the Schaffer family in September at home. Mom, Rachael (midwife) and family all attended her water birth. The Schaffers enjoy their fresh raw milk every day from the family's pet goats. They also enjoy their cod liver oil and fresh eggs. Mom makes lots of soups, boiling the bones for marrow broth, which the family loves. They also plant a large garden and freeze, can and ferment food for the winter. All kids enjoyed Mom's breast milk the first year of life.



Keenan Matthew Lindsay, the happy healthy baby of Jason Lindsay and Julianne Boyajian, weighed 20 pounds at six months! Due to Mom's low milk supply, Keenan has been on the raw milk baby formula since he was four and a half weeks old. Mom followed the Weston A. Price pregnancy diet consuming liberal amounts of butter, eggs, animal protein and fat, and other nutrient-dense foods. When Keenan was born all the medical staff were absolutely amazed at how alert and strong he was!

Please submit your baby photos to Liz Pitfield at liz@westonaprice.org. Be sure to label photographs with the full name of the baby.

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We now have local chapters in every state except West Virginia and Rhode Island—volunteers most welcome for these states.

A big welcome to our new chapter from Pakistan!

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RAW MILK GRANNY GALLERY

Jeanette Stump of Little Mill Creek goat dairy in Ridgeway, Pennsylvania is a raw milk granny for her two beautiful granddaughters, Paige and her little sister Ariana. She meets her daughter half way every week to deliver five quarts of raw goat milk. Ariana began drinking raw goat milk when she was two months old as she had an allergic reaction to formula. She had blood in her stools and cried incessantly. Jeanette suggested raw goat milk but her parents were hesitant. However, after reviewing the information at westonaprice.org, they agreed to give it a try. Within 24 hours, Ariana was sleeping three to four hours at a time and her stools had returned to normal. She is now a year old and rarely cries or fusses. Paige also enjoys her raw milk. What lucky girls to receive such a precious gift from her grandmother!

Please submit your raw milk granny photos to Liz Pitfield at liz@westonaprice.org. Be sure to label photographs with the full name of the grandmother.

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Pittsburgh chapter leader Carrie Hahn with Louise Mitchell, Sustainable Foods Coordinator, Maryland Hospitals for a Healthy Environment, University of Maryland School of Nursing, provide WAPF literature at the Clean Med conference, May 20-22 in Pittsburgh.

WAPF at Clean Med



Louise Mitchell is the real mover and shaker in the hospital food setting. Here she is confronting a high ranking representative from the AMA, who was filling in for keynote speaker, AMA President Ronald Davis, suffering from pancreatic cancer. According to Carrie, "Louise got right up there and started asking him lots of tough questions."

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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 are posted at www.westonaprice.org/chapterleaders/ 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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Photo by Ray Cortes.

Washington Raw Milk Rally



Photo by Kimberly Hartke.

On the steps of the Capitol in Washington, DC, raw milk activists rally on June 2 for the Food Network, which is doing a story on raw milk for national television.

LEFT: Richard Morris, author of *A Life Unburdened*, describes how raw milk helped him lose 150 pounds.

RIGHT: Passersby get a taste of Nature's perfect food.

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North Dakota WAPF activists gather for a March seminar in Minot, North Dakota. From left to right, Georgeann Lick, Myron Lick, Minot chapter leader Farrah Faulkner, Judith Howard, Peter Hugret, Sally Fallon, Elizabeth Eckert and Ann Keller.

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28-page Dietary Guidelines Booklets are \$1 each (includes shipping & handling), 60 cents for 100 or more

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COSTA RICA

Nathan Lapp 011-506-765-1116, Nathan@mightyivers.net, www.mightyivers.net
Turriablba: Gina Baker & Reinhold Muschler (506) 2556-8021, waldorfcostarica@yahoo.com

EQUADOR

Melissa De Leon Douglass, cookingdiva@gmail.com

FINLAND

Tammisaari: Henrik Nyberg 358 (0)19-204 456, henrik.nyberg@makrobios.fi

GERMANY

Grosslangenfild: Anita Reusch and Douglas Mitchell, 0049-(0)6555-242, anita@roylt.com

ISRAEL

Ramat Bet Shemesh: Milka Feldman 972-77-320-0742

NEW ZEALAND

Christchurch: Dermot Kieran Whelan 0064 3 3519733 sundara12003@yahoo.com.au
Invercargill: Sherry Elton (64) 3213 1156, sherry@sherryelton.co.nz, www.sherryelton.co.nz
Lower North Island: Susan Galea (64) 6356 5186, susangalea@hotmail.com, www.realmilk.co.nz
South Canterbury: Ingrid Weihmann 03 686 6613, onlynatural@paradise.net.nz
Wellington: Ian Gregson 64 04 934 6366, wapf@frot.co.nz www.wapf.org.nz
NZ Resource List: Deb Gully, deb@frot.co.nz, www.diet.net.nz

PAKISTAN

Dr. Shagufta Feroz & Feroz Sharfuddin 92-42-8484303, drsferoz@yahoo.com

PANAMA

Melissa De Leon Douglass, cookingdiva@gmail.com

UNITED KINGDOM

Bournemouth & Poole: Kelvin Snaith & Sarah Turner 07 71989 5015, kelvinsnaith@hotmail.com, sarah_alice_turner@hotmail.com
London & South East: Christopher & Peppa Ann Tolley 4417 5366 9166, chris_tolley80@hotmail.com

The Shop Heard 'Round the World

Dedicated to Helping the Consumer Obtain Nutrient-Dense Foods and Accurate Nutrition Information

FARM PRODUCTS BY STATE

CA

Grass-fed, ranch-raised natural light beef. Locally ranch-raised, in Orange County, California. No additives or preservatives. Not available in stores **delivered to your door**. Frozen in 1 1/2 pound packages. (714) 749-5717, 5Bar Beef. 9/2

DC

CSA: Hi-Brix, nutritionally dense, biodynamically grown kitchen vegetables, grass-finished beef, pastured pork, broilers and eggs. Openings for 2007 season in DC Metro area. Contact Allan Balliett, info@freshandlocalcsa.com (304)876-3382, www.freshandlocalcsa.com. *9/4

H Street Community Market food coop on Capitol Hill. It will be WAPF-friendly offering pastured meat, eggs, dairy, hard-to-find flour, biodynamic products and local products when available. We encourage you to join and help shape the vision and products that will be offered. For more information visit our website: www.hstcommunitymarket.org or email, hstfoodcoop@gmail.com. 9/3

IL

COME TO OUR FARM - Healthy, FAT, beef & pork, born and raised certified organic - no nitrates. Sides or cuts (as available) plus many other healthy foods. Chapter Leaders Dale Kelsey - sustainable producer receiving no government funds, no grants, no subsidies, & Eileen Kelsey, CHom. incorporating WAPF Nutrition with Classical Homeopathy (815)-239-1466. 9/3

IN

Raw milk cheeses, grassfed beef, veal, whey-fed pork. Also, a variety of fresh raw dairy products available as "pet food". 100% pastured cows. NO hormones, pesticides, antibiotics used. Available from the Yegerlehner's "The Swiss Connection". (812)939-2813 www.swissconnectioncheese.com, Clay City, IN. 9/4

We encourage our readers to obtain as much of their food as possible from small farms and independent businesses.

MA

Babcia's Farm. Certified organic pastured chickens, turkeys, eggs and vegetables. Sourdough breads and other whole grain baked goods, lacto-fermented sauerkraut and kombucha. Lard and more. All poultry must be pre-ordered. Visit our farm shop or Hardwick Farmer's Market. Contact Melanie at (978) 355-4053. 10/1

MistyBrook Farm offers certified organic raw cow's milk, beef, veal, pork, lamb, eggs, and vegetables. Raw milk available year-round from 100% grass-fed cows. Visit our traditional mixed farm! Katia Clemmer at (413) 477-8234 email mistybrookorganicfarm@yahoo.com, located in Hardwick, MA. 9/2

MD

Organically raised grass-fed beef, free-range eggs, pastured chicken. Pick up from Potomac, Buckeystown or Emmitsburg (beef only). No hormones, antibiotics, or animal parts are fed. Beef never fed grain. Nick's Organic Farm, Quality Organic Products since 1979, Nick Maravell, (301) 983-2167, nickmaravell@comcast.net. 9/4

Windmill Meadows Farm, Washington County, MD. 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). (301) 739-5258. 9/2

FARM PRODUCTS BY STATE

MI

Creswick Farms. Dedicated to raising healthy, happy animals, lovingly cared for just as Mother Nature intended, which provide high-energy, nutritious and delicious food for health-conscious individuals. No antibiotics, steroids or GMOs ever fed to our animals! (616) 837-9226, www.CreswickFarms.com. 9/4

Pastured poultry, chickens & turkey - whole or pieces, ground or sausage, available year round. Fresh in summer. GMO-free. No antibiotics, hormones or chemicals. Year round greenhouse salad production; vegetables in season. Happy Hill Farm, Hart, MI (231) 873-8972, sweetwaterlocalfoodsmarket.org. 9/2

Organic Raw milk cheese from pastured cows. Gouda, Edam, Gouda with spices and Cheddar. \$7.50-8.50/lb plus **shipping**. Also grass-fed beef, lamb, turkey, pork, chickens, and eggs available on our farm. Steve-N-Sons Grassfields Cheese, 14238 60th Avenue, Coopersville, MI, 49404. www.grassfieldscheese.com. 9/3

MN

Farm On Wheels offers animals raised green grass-fed & certified organic. Nutrient-dense beef, lamb, chicken, eggs, turkey, goose, duck, pork, lard, butter. No corn or soy. Farmers Market year around in St. Paul, Prior Lake, Northfield, Just Food. Linda (507) 789-6679, www.cannon.net/~farmonwh. 10/1

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**. (888) 331-9115 for more information. www.pastureland.coop. 9/4

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FARM PRODUCTS BY STATE

NJ

Fresh Vital Foods from fertile soil. A natural function of soil, sun, rain, and compost and traditional, sustainable farming. Brown eggs with orange yokes from chickens on grass pasture. Seasonal vegetables and Native American fruits & nuts: Persimmon, Pawpaw, Black Walnut, Hazelnut. River Birch Micro Farm, 19 Forman Ave Monroe Township, New Jersey 08831 (732) 605-0444. 9/3

NY

All natural grass-fed black Angus, located in the Finger Lakes of New York, sold by the quarter or half. Call (315) 536-7208. Southview Angus Farm, Penn Yan, NY. 9/4*

Biodynamic raw milk available through herd-lease program. Also pastured chickens and fresh eggs available. Pleroma Farm, Arthur Lups, Hudson, NY (518) 828-1966. 9/3

Certified organic grass-fed dairy. Raw milk cheeses, cottage cheese, yogurt, sour cream etc. from Jersey cows. Eggs from pastured chickens. Grassfed beef, pork, chicken, rabbit and turkey. Long Island drop. (717) 768-3437 Pleasant Pasture Organic Acres. 9/4

OH

Ber-Gust Farm – pastured, miniature Jersey dairy cows. All natural beef, pork, poultry and produce. Also jams, jellies, honey & apple-butter. Waynesfield, Ohio. (419) 230-2195, (419) 230-2194, www.ber-gustfarms.net. 9/3

Jubilee Meadow Farm, LLC - All-grass dairy with Dutch Belted Ayrshire cows. Very small fat particles, very easy to digest. Herdshares available, also grass-fed beef, pork, poultry, & eggs. North of Columbus, off I-71. (419) 946-1413 or stevofarms@redbird.net. 9/2

OR

Grass-fed beef, pastured pork, chicken and lamb. No antibiotics, hormones, synthetic nitrogen fertilizers. **We ship mixed boxes** starting at \$119 for 20 lbs. Discount for local pickup. Also raw cow's milk. Visit us at www.deckfamilyfarm.com. (541) 998-4697. 9/3

PA

Bareville Creamery 100% Grassfed offers Cultured Butter and Farmstead Cheese. **We ship to you!** Or visit our farm to pick up. Special price on Fall 2006 butter. Call for prices Daniel Zook, Leola, (717) 656-4422. 9/4

Certified, Organic, no-grain dairy, selling raw milk and raw milk cheeses. Also organic bread grains and raw honey. Hope Springs Farm Loren Weaver Family, East Earl, PA, 17519 Telephone: 717-445-0281. 9/2

Certified Organic Dairy. Raw milk cheese pastured chickens, turkeys, pigs, 100% grass-finished beef, beef & chicken broth. Call for more information (717) 786-8093, Green Hills Farm, John & Annie Esh, Quarryville, PA, 17566. 11/4

Certified organic grass-fed dairy. Raw milk cheeses, cottage cheese, yogurt, sour cream etc. from Jersey cows. Eggs from pastured chickens. Grass-fed beef, pork, chicken, rabbit and turkey. Call for information. **Will ship.** (717) 768-3437 Pleasant Pasture Organic Acres. 10/4

Raw Dairy Products from our grassfed Jersey cows. Eggs from our free-range pastured chickens. Beef from our own beef cows. Pork from our own pigs. Running Water Farm, Isaac & Mattie King, 1238 Clay Rd. Lititz, PA, 17543, (717) 627-3177. 11/4

Raw Dairy Products from our 100% grass-fed Jerseys. Free-range, grass-fed, chicken, turkeys. Suckling veal, whey-fed pork, lard. We do not use hormones or antibiotics. Shady Acres, Glenn Wise, 8514 Elizabethtown Rd. Elizabethtown, PA, 17022, **Shipping Available.** (717) 361-1640. 9/3

Pasture-raised raw milk and dairy foods. Also chicken, turkey, veal and beef. Nature's Sunlight Farm, Mark and Maryann Nolt, Newville, PA, (717) 776-3417. 9/4

Certified raw milk and whole raw milk cheeses made right on our organic farm. No grain is fed to our cows. Butter, cream, yogurt, sour cream. CARE members only. **We will ship cheese.** Hilltop Meadows Farm, Pine Grove, (570) 345-3305. 9/2

Raw milk cheese from our grass-fed Jerseys, made on our family farm with Celtic seasalt. No grain fed. 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. 11/2

Heirloom Herbs and Vegetables in season. Salad-greens grown chemical-free. Fermented zucchini, beet kvass and more Sourdough breads **by order** (no sales Sun). John Z. Stoltzfus, Heirloom Gardens, 549 Beaver Dam Road, Honeybrook PA, 19344 (610) 273-2633. 10/1*

TN

We are a family farm offering all-natural, delicious, grass-fed lamb, pork, beef and chicken. We now offer Jersey heifers for family milk cows (gentle!!) Call (866) 866-3287. Ask for Justin or Liberty or email: topoftheworld-farm@wildblue.net. 9/4

VA

Manassas Milk Project has raw milk shares available. Milk is from your own pastured Jersey cow. Western View Farm, Call Martha Bender (540) 788-9663. 9/4

Salatin family's Polyface Farm has salad bar beef, pigator pork, pastured chickens, turkeys and eggs, and forage-based rabbits. Near Staunton. **Some delivery available.** Call (540) 885-3590 or (540) 887-8194. 9/3

WI

100% Grass-fed Organic Black Angus beef, Pastured pork and chicken. Beef and pork fat (tallow & leaf lard), organ meats and chicken feet. MSG & Nitrate-free all-beef hotdogs, deli roast beef, kielbasa and naturally cured hams and bacon. Also, traditional cooking instruction. Anderson Farm is located 45 min. SW of Eau Claire WI. (888) 700-FARM (3276), andersonfarm@nelson-tel.net, www.andersonfarm.us. 9/3

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. 9/3

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NOURISHING FOODS

BUTTER. Amazing Grazed Real Butter! Step back in time to the way butter was meant to be! Rich, creamy butter and heavy cream from our pasture-based certified organic dairy, butter \$12/#, 40 pounds or more \$10/#. Also, organic grass-fed lard, beef, lamb and pork. Shipping available. Green Hills Harvest (660) 244-5858. 9/4

COCONUT OIL. Nature's Blessing - USDA certified organic. Discovered on my recent trip to the Philippines, this oil is wonderful! Coconuts are grown and processed on site within 8 hours, cold-pressed. The oil is clear with a wonderful mild flavor. Carrie Hahn, WAPF chapter leader (412) 531-4485. 9/3

EGGS, grass-fed from our free-range hens. Nutrient-rich eggs are our business, not a sideline. Hens have access to fresh grass, sunshine and exercise. No hormones or antibiotics. Will ship. Silver Leaf Acres, Fax or call 715-257-1397. 9/3

FOREVER GREEN. Introducing FrequentSea with marine phyto-plankton, the best raw whole food supplement available, exclusively from ForeverGreen. Visit superphyto.com for more information about this powerful superfood. Distributors needed now. Go to marine-wellness.com for more information on this awesome home-based business opportunity. 9/3

GARLIC. Organic & Chemical Free as Nature intended. Whole cloves or dehydrated powder/chips. Erker Organic Farms, Burlington, CO. (719) 346-5026. *9/3

LACTO-FERMENTED VEGETABLES, raw, certified organic, locally-grown. Dill pickles, sauerkraut, kimchi, ginger carrots. Sold/Shipped within Northeast only. See website for store list and mail order info. Contact: Real Pickles, PO Box 40, Montague, MA 01351, (413) 863-9063, www.realpickles.com, info@realpickles.com. 10/1

LACTO-FERMENTED VEGETABLES, cultured, 100% organic, by Immunitrition. Three delicious, raw blends - Garden, Sea & Sunshine. Ships throughout USA via UPS. Available in 32 oz. jars or try our Cultured Veggie Taste Tester with bonus pumpkin oil & sea salt. (877) 773-9229, www.culturednutrition.com. 9/3

SAUERKRAUT. Certified organic unpasteurized sauerkraut and kim chee, raw, still alive! Made in small batches and fermented in ceramic crocks. Other fermented vegetables available. We ship anywhere in the US. Wills Valley Farm Products, LLC, Kutztown, PA www.willsvalley.com (610) 683-5540. 9/2

SAUERKRAUT, ORGANIC, RAW. Fresh, Raw, & Alive! Gold Mine's Fresh Organic Sauerkraut is abundant in friendly, living micro-organisms that are powerful aids to digestion and assimilation. Independent lab tests show 7.8 million CFU's of live lactobacillus and bifidobacterium species per gram - that's 468 million per 1/4 cup serving! 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 2004-2007. To order, call (800)475-3663 or go to www.goldminenaturalfoods.com. 9/3

SPELT. Organically grown. Traditional Oberkulmer Variety. Our spelt is grown by a certified organic farmer. We ship anywhere in the US. We sell by the pound. Contact the Plain Grain Co. LLC for details: www.carasmaternalconnections.com, cara@carasmaternalconnections.com (248)628-8646 (paypal accepted). 9/2

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AIR PURIFICATION - Ecobox uses ActivePure Space Certified Technology. Sends the solution to the pollution (air/surface germs like MRSA, staph, mold; VOC's; odors; smoke; and dust) that compromises health. Covers 1500 sq ft. Contact Madeline at Purely Green Environmental, LLC, (888) 291-3773, PurelyGreenEnviro.com. 9/2

BABY PRODUCTS. Cloth diapering, slings, cart covers, pure herbs, Nature's Sunshine vitamins and much more. Certified nutritional consulting available. carasmaternalconnections.com, cara@carasmaternalconnections.com (248) 628-8646 (paypal accepted). 9/2

CURE FOR TOOTH DECAY. At last, the real truth about your teeth. How to prevent and halt cavities for life. Utilize the wisdom of Weston Price and Melvin Page. Buy the book, Cure Tooth Decay! \$29.95 www.curetoothdecay.com. *9/3

DVD of JOEL SALATIN. "Heal the Planet by Healing Your Plate," presented at the Florida launch of the Farm-to-Consumer Legal Defense Fund August 2007. About 2.5 hours. \$20 donation to local WAPF chapter, includes shipping to US. Email WAPFSarasota@gmail.com. *9/3

LAUNDRYPURE Join the No Suds Revolution with. This appliance that hooks up to your washing machine will save you money, the environment and your clothing. No detergents or hot water needed. It uses RCI, a green chemistry solution that is Certified by the Space Foundation. Say goodbye to smelly socks, itchy skin from residual detergents, waste from empty plastic detergent jugs and polluted streams and waterways overloaded with detergent suds. Contact, Purely Green Environmental, (888) 291-3773, Madeline@PurelyGreenEnviro.com. 9/2

MAGNETICO SLEEP PADS Renew your energy while sleeping. Developed by Dr. Dean Bonlie, MagnetiCo is the only magnetic sleep pad backed by ten years of scientific research and designed to deliver the correct negative magnetic field to the body. Six-month satisfaction guarantee. Call Dr. Dave Morris at cell (559) 760-7618 for info. & clinical results. 9/4

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HEALTHY PRODUCTS

NATURAL PRODUCTS. Life Energy Store: Nourish your body, heart & spirit. Delicious nutritious foods: pure chocolates, coconut, mesquite, agave, salts. Additive-free supplements. Natural soaps. More nourishing, earth-honoring, healing products to vitalize your vibrant health and well-being! www.LifeEnergyStore.com (888) 846-6412 magic@lifeenergystore.com. 10/1*

WATER PURIFICATION. Health-enhancing water from your tap, certified by NSF, Dr. Masaru Emoto tested, generate income as independent marketing consultant for established international company offering water filtration/purification/energization units and more, www.intelligentwater.net. (800) 679 7042 ext 7321. 9/3

FARMING/WAPF LIFESTYLE

COMMUNITY HOUSING. Creating first of 12 holistic assisted living homes for elderly in Aurora, Colorado. Am looking for chef/nutritionist/teacher to implement healthy cooking and eating, following the teaching of Sally Fallon & Victoria Boutenko. Also looking for investors, grants, funding help. Contact Alan at (303) 823-0291 or abolo10@earthlink.net. 9/4

COMMUNITY AND FARM FORMING in Central CA seeks WAPF aficionados to be cofounders. We value community, sustainability, self-sufficiency, organic farming and nourishing food. We hold regular meetings in San Francisco. Join us! For more info, visit redskymorn.googlepages.com. 9/2

COSTA RICA. Mighty Rivers Haven, on Costa Rica's Caribbean coastal area, invites you to stake out your own 5-acre plot in a land that literally flows with raw milk and honey. Experience year round eco-tropical luxury in a traditional foods setting. Common area includes large mountain river jungle and natural swimming pool. Tours & lodging, vacation packages. www.mightyrivers.net 10/1*

COWS WANTED: Several grass-fed milk cows or heifers, within 300 miles of Harrison, Arkansas. Pastured poultry for sale. Fresh or frozen, no hormones or antibiotics. North Central Arkansas (870) 427-3039 littleliant-productions@yahoo.com. 9/4

SAWSOMME (SAW-SOM-ME) represents Sunshine - Air - Water - Soil - Ocean - Minerals - Microbes - Energies. Properly balances life's precious benefits. All are needed in agriculture to start, nurture and sustain life's requirements. SASE. Ed Heine, 14N446 Hwy 20, Hampshire, IL 60140. (847) 464-5987. *10/1

TENNESSEE BED & BREAKFAST. Spend your next vacation on a working farm, LaBelle Acres in Jamestown, TN. Guests are welcome to fish in the ponds, fight chickens for eggs, or just sit on the porch rocker. Breakfast foods are supplied, guests are welcome to prepare them when they desire. For more information, call (931) 863-5594 or labelleacres@yahoo.com or <http://www.bedandbreakfast.com/tennessee-jamestown-labelle-acres.html>. 10/1

VERMONT FARM seeks 2008 apprentices. We integrate American Milking Devon cattle, pigs and chickens with growing and fermenting six tons of vegetables. Our grain-free cows support raw milk sales plus butter and cheese making. We focus on selling nutrient-dense foods while eating well ourselves! Learning opportunities include milking, biodynamics, natural livestock care. Positions available April to November, short and long term. Cabins, food, laundry, Internet access and lots of education. Call Doug Flack, (802) 933-7752, Flack Family Farm, www.flackfamilyfarm.com. 9/4

SERVICES

ARTICLES NEEDED. NATIONAL DIRECTORY of organic food sources and other natural Health Products needs articles, new releases, recipes, and information about your products and services for further issues. Advertising available. Sample \$3. Buffalo Creek Publications, PO Box 397, Buffalo Lake, MN 55314. *9/3

PACKAGING. Azure Packaging, custom bottling, packaging & encapsulating small runs no problem- full lab analysis available call Jason Mobil. (402) 336-7130, fax (402) 338-5555. 9/2

REMODELING. Michael's Remodelling, Baths, Basements, Kitchens, Decks. Serving Northern Virginia for 17 years. Michael Meredith (703) 764-9563. 9/3

FUNDING NEEDED

FARMSTEAD FRESH Inc. is soliciting investors to help with business expansion. The business is known for training sustainable dairy farmers in making gourmet quality "One Step Above Organic" grass-fed raw milk cheese and marketing it. www.farmsteadfresh.com. 9/3

GIVE A JOB is a non-profit initiative in Israel which needs help funding a green house and olive press. The aim is to create jobs for those suffering poverty. Tax exempt receipts given. For more info, please email Shapir at parrots@netvision.net.il. *9/2

INVESTORS NEEDED. Next Level Productions is seeking investors to complete its documentary film "Body Armor." The film follows the journey of individuals with chronic illnesses as they explore natural medicine and alternative therapies. Contact Gabe Golden. (310) 779-2816, Gabegolden310@yahoo.com. *9/4

MILK MOVIE. Grass roots effort needed. For documentary. Help us make a difference! Soliciting funds to shoot a documentary of the story of raw milk. Every dollar will help us bring the story of this incredible healing food to the screen. Douglass, Schmid, McAfee, Fallon and others will play major roles in bringing you "The Raw Truth." Send checks payable to: White Tiger Productions C/O First Republic Bank, 1099 4th St. San Rafael, CA 94901. *7

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ANCIENT TRADITIONAL HEALING WAYS. Awaken vibrant health and well-being in body, mind and spirit with extraordinary ancient teachings and effective self-empowering tools. Holistic counseling, energy healings, retreats. Discount for WAPF members. JoAnne Dodgson EdD, www.pathwaysforhealing.net, (888) 846-6412, joanne@pathwaysforhealing.net. 9/2

DR. NICK SAUNDERS . WAPF oriented physician, located in Copley, Ohio, (330) 760-1975. nick@docmts.com. Specializing in menopause, andropause, aging. 9/2

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HEALING ARTS

FEMALE reproductive health and empowered mothering through herbs, oils, essences, and whole foods, with emphasis on a TRADITIONAL DIET. Fertility, pregnancy, PMS and menopause. Private consultations, private and group cooking lessons available. Maryland, DC, NoVA. Monica Corrado, (240) 988-9312, simplybeingwell@aol.com. 9/4

FOOD AS MEDICINE Workshop. Sharon A. Kane, Instructor. Get the most out of your food! Ongoing classes teach gentle detoxification protocols and hands-on instruction in the making of kombucha, kefir, gluten-free bread and lacto-fermented pickles. Call Sharon A. Kane, (508) 881-5678, email Gpath2003@yahoo.com or visit: www.sanctuary-healing.com. 9/4

HOMEOPATHIC Care for Babies and Children. Join the Kairos Network Homeopathic Study Group. Member of WAPF, NCH, HEAR, and the Catskill Medicine Wheel. Low cost, effective, very useful for self care and home prescribing. Tutoring by mail for Study Group members only. Beginners welcome. Make this part of your prepared parenting program. Send SASE to: Liz Potter, 321 Wahl Road, Livingston Manor, NY 12758. 10/1

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and graze a mixture of
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sweetmeadowsfoods@yahoo.com

9/4

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9/4

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9/2

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grass-fed raw dairy products
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Shipping Available
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9/4



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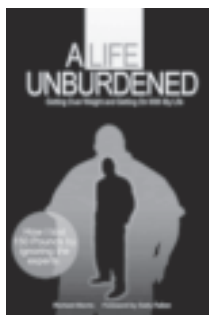
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2008

- July 4** **Christiana, PA:** Potluck Picnic to celebrate the first Anniversary of the Farm-to-Consumer Legal Defense Fund. **Contact:** Cathy Raymond (703) 499-5511, cathy@ftcldf.org, www.westonaprice.org/calendar/FTCBirthday.html.
- July 12** **Swoope, VA:** Polyface Farm Field Day featuring Joel Salatin and Daniel Salatin. **Contact:** (800) 355-5313, info@acresusa.com.
- July 17-31** **Switzerland:** Space is still available for the Swiss tour. Swiss Native Judy Mudrak is organizing the third annual two-week trip to Switzerland for 12-20 healthy, interested members of the WAPF. Come see the cows, goats and sheep, meet the mountain farmers! Watch the modern/primitive Alpine cheese making and wood-wheel butter making--dying arts! Speak to a mountain bee farmer, see heirloom animals, attend a Swiss festival, ride the route of the Glacier Express! Historical 'hands on' make-and-bake rye sourdough bread, herbalist guided Alpine plant walk with herbal salve making, splendid mountain views and more! Visit various regions including the Loetschental, where Dr. Price did his research. The tour is for two weeks and the price is 1750.00 dollars inland fees only. That includes overnight stays, breakfast, scheduled tours with midday meals. You will book your own flight to Zurich and obtain your own Swiss Rail pass. **Contact:** Judith Mudrak, 58 Cranberry Run, Southampton, NJ 08088 USA. Phone: (609) 859-3828 EST or reversemydisease@yahoo.com, SUBJECT: WAPFCH08.
- Aug 2** **Lebanon, PA:** Raw Milk Seminar sponsored by Pennsylvania Independent Consumers and Farmers Association (PIFCA) hosted by Senator Mike Folmer at Cedar Crest High School and featuring Ted Beals, Sally Fallon, William Reil and Pete Kennedy. Fee/donation of \$20 includes picnic lunch provided by C.A.R.E. farmers. **Contact:** Kathy Cook (717) 432-2231 h, (717) 580-1900 c, PICFA_Communications@verizon.net.
- Sep 13** **Ann Arbor, MI:** The Deidre Currie Festival, a celebration of Food, Farming, Community and One Beautiful Person featuring Dr. Natasha Campbell-McBride, Jerry Brunneti, Karen Lubbers and Sally Fallon. **Contact:** Archie Welch (248) 620-8969, www.deidrecurriefestival.org.
- Oct 1** **Baltimore, MD:** Nourishing Traditional Diets, the Key to Vibrant Health, by Sally Fallon at the Waldorf School of Baltimore, 4801 Tamarind Road, 7:00 PM, \$5 per person. **Contact:** Alejandra Lorenzo-Chang (410) 367-0647.

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