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Wise Traditions

IN FOOD, FARMING AND THE HEALING ARTS

Volume 17 Number 4

Winter 2016



MEN'S HEALTH ISSUE

Fueling the Modern Athlete
The Problem with Protein Powders
Traditional Foods in Iran

Restoring Male Fertility
Glyphosate in Collagen
Feeding Teenage Boys

A PUBLICATION OF

THE WESTON A. PRICE FOUNDATION®

Education Research Activism

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WiseTraditions

IN FOOD, FARMING AND THE HEALING ARTS

Volume 17 Number 4

Winter 2016

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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. 



Wise Traditions



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President's Message

Here at WAPF we put a lot of emphasis on nutrition for pregnant women and growing children, and also on holistic treatments for various diseases. In so doing, the health of our menfolk often gets left behind.

This issue of *Wise Traditions* aims to rectify that omission by bringing you two of the outstanding presentations from our 2016 conference—"Fueling the Modern Athlete" by Ben Greenfield and "Restoring Male Fertility" by Veronica Tilden, DO. It should come as no surprise that the key to athletic performance and also to male fertility is a return to traditional foods, especially animal fats and organ meats, and not all the gels, sports drinks, potions and powders that are so shamelessly advertised to bodybuilders, triathlon competitors, athletes and fitness buffs.

These concoctions are all based on those familiar ingredients—refined sweeteners, artificial sweeteners, additives, flavorings, refined carbs and . . . isolated proteins. That's the subject that I take on in this issue, the protein powders derived from soy, whey, pea, hemp, rice and other oddities. Far from supporting athletic performance, these refined proteins represent the fast track to burnout and infertility because they rapidly deplete vitamin A. We now have the scientific explanation for why traditional peoples never ate lean meat, and in fact always preferred the organ meats and fats.

Also in this issue, Merinda Teller tackles the challenge of keeping teenage boys with their voracious appetites well-fed and nourished; and finally Joette Calabrese provides her wisdom on supporting our menfolk with homeopathy.

Our 2016 conference in Montgomery, Alabama was a wonderful reunion of friends and colleagues, and a venue for important information from our many speakers. We've sprinkled photos of the event throughout this issue.

Mark your calendars for *Wise Traditions 2017* in Minneapolis, Minnesota, November 10-13. We'll be updating our website conference page with information on the conference as it becomes available.

Our 2017 Shopping Guide is in the mail. Please remember the Weston A. Price Foundation in your end-of-year giving. We do a lot with a small staff, but financial support from you, our members, is key to our success.

Coming in 2017: the launch of our updated website; a weekly recipe blog; the launch of our 12 Spoons restaurant rating site; and more podcasts, blogs, Facebook discussions, cutting-edge journal articles, and activism in the areas of raw milk, farm freedoms and vaccination choice. Stay tuned! 

Letters

BRAINWASHING

Tim Boyd's thumbs down review of *My Beef with Meat* by Rip Esselstyn (Fall 2016) touched on the most important aspect of Rip's storytelling: his lack of direct long-term experience in the field of nutrition. Even the nutrition-related work of his father, Dr. Caldwell B. Esselstyn, Jr., is very limited, misleading and overrated by vegans, including macrobiotic vegans, who are cashing in on fear-mongering about meat. I should know, I have spent decades in the heart of this community, and recognize the origin of the lies and brainwashing about vegan nutrition.

Despite nearly thirty years of heartfelt and "perfect" macrobiotic vegan practice, and despite hours and hours of cooking a wide variety of plant foods every day for every meal, I became sick. I thought I was lucky because I had expert guidance from teachers at the Kushi Institute for macrobiotic education, but then macrobiotic teachers began dying of cancer

and other diseases. So I introduced supplements and then meat and dairy products. I began to heal and regain my health. The quickest aspect of healing an aggravating painful condition for me came from beef.

Now I get down on my knees and thank the animals for giving me life and helping me heal. I feel such a profound loving connection with them. Without the forty years of experience and guidance of macrobiotic teacher and counselor, John Kozinski (also my husband), I would never have accomplished this. John guided me back to health on a new road for us. He resigned after twenty-seven years on the faculty at the Kushi Institute when the fourth vegan-style macrobiotic cooking teacher died of cancer. John went on to create a new system he calls "Full Spectrum Macrobiotics," which includes animal foods for those willing to eat them. He helps vegans and vegetarians with supplementation to replace animal foods they do not want to eat (macrobiotic.com).

The difference in my health and overall wellbeing with the inclusion of animal foods was the most immediately powerful part for healing and just too good to give up again. We promote Alan Savory's method of livestock production and do not support factory farming. We also thank the Weston A. Price Foundation for their work, which was instrumental in changing John's mind about what he was teaching and recommending to people.

Jeanette Thomas-Kozinski
Becket, Massachusetts

RAW MILK FOR DENTAL PAIN

I had incapacitating pain in my head, a suborbital neuralgia that recurred every several seconds or minutes and lasted for several seconds each time. The pain was from a dental infection in my gums and roots. The periodontitis was so bad that my teeth were becoming loose. I drank a quart of raw whole milk in one day and the pain was less severe the following day.



Tetyana Obukhanych, PhD, receives the coveted Mary G. Enig Integrity in Science award for her work on the immune system.



Gina Rieg, chapter leader from Columbia, MD; Hilda Gore, WAPF podcast host and chapter leader from Washington, DC; and Rebeca Gore.

Letters

After two days of drinking a quart each day, the pain disappeared and my gums stopped bleeding.

Unfortunately, I traveled to Las Vegas for a few days where raw milk is difficult, if not impossible, to get. Yogurt and a tea tree oil rinse helped, but the pain came back at least once a day. As soon as I was back in a state where raw milk is easier to buy, I continued to drink it and the pain again disappeared. After eight days of drinking raw milk and also cutting down on foods high in phytic acid, which chelates calcium from the body, my gums are less red and less sore and my teeth are more stable.

Kiai Kim
Brooklyn, New York

THRIVING

I wanted to share my story of how the Weston A. Price Foundation has changed my life. WAPF helped me nourish my son Noah back to optimal health through breastfeeding issues. He went from doctors classifying him as borderline failure to thrive (not on the chart for his age) to now being 30.5 inches long (73rd percentile), head is 48.3 cm (95th percentile), and weight is 21 pounds 10 ounces (56th percentile). Food was really medicine for him. I found the WAPF while he was having weight gain issues, and I was looking for the best way to help him not only gain weight, but flood his body with nutrients once we started solid foods.

He was born very quickly with a nuchal hand, which caused the plates in his head to shift, and he could not transfer milk well. It took until four months to figure out, and he didn't complete craniosacral therapy until about

seven months. I started exclusively pumping for a while, but he still had quite a bit of weight to make up. So, when he started solids at six months, I wanted to give him the best. These nutrient-dense foods, or "sacred" foods, that WAPF recommends allowed him to start gaining weight quickly, completely catch up in growth, and have crazy hair growth so that he needed a haircut at nine months. I noticed his



head grew the most (I just knew all that healthy fat was building his brain), and the cod liver oil made his face go from narrow to round with a wide jaw and optimal facial structure. I mix his cod liver oil with half an avocado and coconut oil to mask the flavor and also add Himalayan salt and kelp flakes for iodine, and he has no problem with it. I call it my "supercharged guacamole."

I began with avocados, egg yolks, veggies with grass-fed butter and grass-

fed collagen, and salmon and sweet potato. I really focused on seafood (salmon, shrimp, tuna, salmon eggs) since those were the cultures with the most optimal face structures, but I also would cook grass-fed ground beef with liver and combine that with carrots, sweet potato or squash and fat. I think this trains kids to be healthy eaters. I now have a one-year-old who devours salmon and veggies (broccoli, cauliflower, asparagus, peppers)! His first birthday breakfast was salmon lox, a runny egg, avocado and sauteed spinach.

At his one-year appointment, the doctor was amazed! He now even has a love for drums and rhythm, which is a good sign of problem-solving skills. My husband even played his trumpet a little bit in front of Noah, and then he gave it to him, who put it to his mouth and pressed the buttons like he was going to play.

Thank you again for all your work and research. I would love to spread the word of the WAPF in any way I can.

Chelsea Thiede
Holt, Michigan

DENTIST AMAZED

I learned something new today. Or, more properly, I witnessed something I already knew but didn't fully trust until I saw it happen.

My daughter Natalie's dentist and her hygienist—both competent people whom I've been going to myself for four years—thought there was something wrong with her mouth during her first dental exam this morning. They were both mystified and initially expressed concern before concluding there was

Letters

nothing wrong with her.

Why were they disturbed? Because they must have never seen a properly formed human mouth before! Natalie has ten perfect teeth on the top and ten perfect teeth on the bottom. They are evenly spaced with substantial gaps between them in a full upper and lower jaw. There is ample space behind the teeth for molars.

The two of them kept going on about the gaps and all the space. I don't believe they had ever seen a child with enough room in her mouth and no apparent upcoming need for braces. They both talked about braces several times as if they were mandatory or expected.

Why is that a big deal? Because Natalie's mouth is like it is by design. As WAPF teaches, one of the first places malnutrition shows up in a human being is in the jaw structure. For some reason the lower jaw in particular constricts when a baby is in utero and the mother is not getting sufficient and proper nutrients. Imagine the fact that a practicing dentist in a mid-sized town in the twenty-first century had never seen a healthy and properly developed mouth before. That's dreadful!

How did Natalie get a healthy mouth? Because I fed her to ensure she got one. And a healthy everything-else to go along with it. From the moment my wife Tina knew she was pregnant, I sourced and cooked every meal for her through birth. I did the same for the duration of nursing, although as time passed Tina began to eat other food more frequently. All the food I made

was purchased from local farms or was organic from a couple of our excellent grocery stores. It was all prepared by my own hands. I think we ate out about three times during the entire nine months of Tina's pregnancy. I also ensured Tina was getting raw, fermented cod liver oil every day.



Then, after birth, I properly obtained and prepared all of Natalie's food until she was two, then much of it after that. Natalie takes cod liver oil off a spoon with me every other day or so and has from near birth. We've learned to love good food and the process of getting it and prepping it. It's all great fun.

We live in a food-rich but nutrient-poor world. We are full, and often fat, but malnourished. I understood that

well enough to do the work to make sure Tina and Natalie were well-fed through the end of nursing, but until I saw the confusion on the face of the dentists, I didn't really understand that it would work and, also, just how bad conditions are for those who don't understand.

Ron Blouch
Mechanicsburg, Pennsylvania

METAL POISONING AND EXTREME AGGRESSION

One of the key substances in the testosterone synthesis pathway is an enzyme called hydroxysteroid transferase (HST). Its role is to convert the precursor to testosterone DHEA into a stable storage compound called DHEA-S, when testosterone is not needed.

Converting DHEA to DHEA-S requires glutathione as a cofactor. Glutathione is a powerful chelator and is very low in people with heavy metal poisoning because there is a constant run on this valuable tripeptide. So if a person's glutathione levels get substantially lowered—as they would be if their body was overloaded with neurotoxic metals—then HST is unable to convert DHEA to DHEA-S and store it safely.

Instead the DHEA starts driving crazily down the highway, gets converted into androstenediol and then on to testosterone. When the DHEA-to-DHEA-S pathway gets impaired due to heavy metal overload, the body instead tries to unload the DHEA via the testosterone pathway, producing lots of testosterone as well as subsequent testosterone-breakdown products, all

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of which are highly toxic.

The result of extreme testosterone is extreme aggression. Extreme aggression equals young men in jail, men snapping and killing a lot of people, men showing violence towards women and children—all for entirely avoidable reasons. African-American boys are four times more vulnerable to the effects of heavy metal poisoning than others. Children who get socked with loads of injected toxins, both boys and girls (boys four times more than girls), throw wall-breaking, self-injurious tantrums.

The tragedy here is that so many young men who have the potential to be wonderful friends, husbands and dads are in jail, unemployed or on heavy-duty anti-psychotics. It ain't mental—it's metal (poisoning). If you

care about the men in your life, first, don't poison them; second, if you did accidentally, please help them detoxify with a nutrient-dense diet. Their true natures will shine through. That means raw milk (contains detoxing compounds glutathione and lactoferrin), fermented foods (bacteria in your gut gobble down heavy metals for you), saturated fats and foods like cod liver oil, liver and egg yolks containing fat-soluble vitamins (critical to support detoxification).

There are also chelating protocols such as EDTA, DMPS, DMSA and MSM. These need to be done under a doctor's supervision.

Sushama Gokhale
Larkspur, California

NEW FORMULA

The Sprite now sold in Ecuador contains the words “nueva formula” on the label. The word “fenilalanina” is the Spanish for phenylalanine. This is for regular, not diet Sprite. This change was made under the radar, and phenylalanine is being added to more and more sodas down here in Ecuador.

In Ecuador, they really love sugary drinks—local fruit juices, often made right in front of you, and sodas also. At times, some people add sugar to regular Coca-Cola! As if it needed more? This change is bad for health, and it's really sneaky how the Coca-Cola Co. dropped this into its products so quietly.

John Garbarini
Azogues, Canar, Ecuador

Phenylalanine is a breakdown product



So many activists, working hard to make the world a better place! Winners of the 2016 WAPF Activist Award, pictured with WAPF president Sally Fallon Morell; from left to right: Frank Niceley, senator from Tennessee; Sally Fallon Morell; Nina Teicholz, author of *The Big Fat Surprise*; Ann Oldham Michaels, chapter leader from Chile; Mandy Blume, chapter leader from St. Petersburg, Florida; Carolyn and Brice Biggerstaff, chapter leaders from Houston, Texas; Sierra Majors, chapter leader from Acadiana, Louisiana; Cilla Whatcott, founder of Worldwide Choice; Karen Lyke, member from Ohio; and Pam Schoenfeld, MS, RD, founder of The Healthy Nation Coalition.

Letters

of the artificial sweetener aspartame. An excess can excite the neurons in the brain to the point of cellular death. Too much phenylalanine in the diet can trigger emotional and behavioral disorders. L-Phenylalanine is produced for medical, feed, and nutritional applications, such as aspartame, in large quantities by utilizing the bacterium Escherichia coli, which naturally produces aromatic amino acids like phenylalanine. Most L-phenylalanine today is made with genetically altered E. coli.

GRAIN-FREE

A few years ago, I wrote that I had gained twenty-five pounds in the first four years of following the WAPF diet, including raw full-fat dairy; pastured meats, organ meats, eggs and chicken; soaked rice; various soaked gluten grains (including kamut and spelt); soaked beans; soaked nuts; kombucha; fermented vegetables; coconut oil; lard; butter; and cod liver oil. I made sourdough bread from a starter.

I had already gained twenty-five

pounds because of having chronic fatigue syndrome and fibromyalgia and eating bad food. However, the weight gain did not make me abandon the WAPF diet. It made me keep reading to find out what additional change I needed to make to suit my needs. I tried gluten-free for a year, but it made no difference in anything. Then I read Nora Gedgaudas' book *Primal Body, Primal Mind*, which convinced me to go grain-free.

Three months later, I realized that



Children enjoy the children's program at Wise Traditions 2016.



Johanna Keefe and Pamela Watts check out the conference program.



Popular speakers Chris Masterjohn, PhD, and Laura Schoenfeld, MPH, RD.



Kathy LeMoine of Platinum Sponsor Radiant Life with Kathy Kramer, WAPF Executive Director.

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I was no longer hurting. In thinking back, it seemed that it had been at least six weeks that I'd had no pain. Then people started saying that I looked like I was losing weight. My clothes still fit the same, so I said no. I did not get on the scale because I did not like those numbers (one hundred seventy-two pounds at just five feet four inches). The weight loss must have been around my face and neck. I did notice that there was no longer a roll or two of flesh at the back of my neck impeding movement.

Then the seasons changed and I got out different clothes. They had been tight but were now comfortable. Next time the seasons changed, my clothes were baggy. Next season change, I had to buy smaller clothes. Now it is four years since I went grain-free and I have lost thirty-five pounds. I do not count calories. I eat when I'm hungry and stop when I'm full. I eat more fat than I ever used to—lard, butter, bacon grease, coconut oil, olive oil, heavy raw cream, whole raw milk. Sometimes I eat a little

past fullness because it tastes so good. I am still free of fibromyalgia pain. I also lost lifelong foot pain.

Also, because of Wise Traditions, I started using homeopathy six years ago. Despite my complete disbelief in it, it worked. I was an RN. I had total faith in allopathic medicine, but it failed me badly. Because of homeopathy, the CFS symptoms have been greatly reduced. I can tend an organic vegetable garden. But homeopathy did not relieve any of the fibromyalgia pain; only a grain-free diet did that.

Other things I am free of: hypertension, irritable bowel syndrome, dry eyes, constipation. I stick to this healing diet 100 percent. I'm sixty-two and feel forty. Thank you, WAPF, and all the people who wrote good books.

Valerie Glodzick
Pennsylvania

Several of the healthy populations that Weston Price visited consumed grains. But they are not for everyone! Valerie's

testimonial shows the need for each individual to tweak his diet for maximum effect.

VACCINATION SCANDAL

While the San Francisco media are busy bashing *Vaxxed*, it is running to packed houses in San Francisco and Berkeley. However, I think it will be a long, long haul before anything seriously radical occurs in public health policy. The vaccine business is simply too lucrative. Wakefield and Bigtree are Davids fighting Goliaths.

The Goliaths are willing to play as dirty as it gets. It reminds me of Tiananmen Square. The soldiers shot at their own kids—until one senior official finally blinked. He was placed under arrest for this treachery of course. But the sands had subtly shifted. The rest is history; China began to open up.

Whistleblowers are now starting to come out of the woodwork, and more and more research fraud is coming to light. But the problem here is different



Sandrine Love with her book, *The Adventures of Andrew Price*, and also helping at the Green Pasture products table.



Angel Forbes Simmons of Villa de Alpacas (right) shows beautiful alpaca blankets to attendees. She also sells alpaca vests with the Wise Traditions logo.



Letters



than Tiananmen. We are not shooting a few kids in a square—we are crippling an entire generation. Our children are our future, and the future looks like one filled with very autistic children, who will live long lives. There will be many more of them (the rate of autism by 2032 will be one in two, with 80 percent being boys), and neither the state nor parents will be able to keep up with the care. I see us as a country in disaster. I see medical neglect of millions of children incarcerated in places too vile to imagine. The insatiable greed of pharmaceuticals and the corruption and collusion in government are likely to cost us our civilization.

Here's how I see the onset of autism in our children. First, oral antibiotics inhibit the excretion of heavy metals like aluminum and mercury (including the mercury and aluminum in vaccines). Aluminum suppresses glutathione and then when the child gets a flu shot (which contains mercury), he cannot detoxify it—you get the one-two punch of two exponentially synergistic metals. Where one would have done a little bit of damage, two do crippling damage.

Normal gut flora demethylates mercury into an inorganic form, which is easily excreted via stools. But antibiotics eliminate over 95 percent of normal gut flora, which greatly reduces the body's ability to demethylate mercury. Antibiotics additionally cause the growth of bad bacteria (*E. coli* and others) and yeast, which remethylate mercury. This methylated mercury is then rapidly reabsorbed by the body. If the child is already constipated (because of low peristalsis caused by morphine-like beta-casomorphins and

gluteo-morphins in its brain from a leaky gut), much, much more mercury is reabsorbed as this toxic slurry stays longer in the intestines.

A study by Rosseneau and others found that nearly 95 percent of children with autism had 10,000 percent more than the normal amount of *E. coli*, so mercury would be constantly methylated and reabsorbed. If a child with an already compromised gut gets a vaccine after a heavy dose of antibiotics, the heavy metal load becomes enormous—the 25 mcg of mercury in a flu shot is already fifty-five thousand times the EPA safe limit.

Then you give the child Tylenol to suppress pain and fever. Tylenol suppresses glutathione (the substance that detoxifies heavy metals) so the mercury cannot be chelated by the body's detoxification systems—thus creating a recipe for disaster.

What can parents do? Avoid the flu shot or any shots for your children, and especially in pregnancy; avoid c-section deliveries; avoid low-protein and lowfat diets in pregnancy; avoid pasteurized milk; avoid vaccines; avoid antibiotics; and above all shun Tylenol (paracetamol). Homeopathy, warm water births, the (nearly) obsessive Indian focus on daily pooping, raw milk and sauerkraut are not quackery, they are a powerful antidote to the toxic cocktail of insults we inflict on our children every day—all in the name of science and health.

We need to go back to clinical trials our ancestors ran for thousands of years by observing the health of their families, not the frequently corrupted, highly conflicted modern-day random-

ized controlled trials (RCTs), which are controlled by big pharma, nor the corrupt federal agency trials that have demonized cholesterol, salt, fats, alternative therapies and all things good.

Your children's lives are in great peril, regardless of who is paying your salary. And you must take action.

Sushama Gokhale
Larkspur, California

TIMES HAVE CHANGED!

This week an ad appeared in the largest newspaper in central California, *The Fresno Bee*, and also in a circular that arrived at our house the same day. It is promoting grass-fed organic beef at Save Mart grocery store.

Save Mart is probably the largest family-owned regional supermarket in central California. The company funded a sixteen-thousand-seat sports arena a couple of years ago for the Fresno State campus. The store also offers an organic vegetable and fruit section for customers.

My, how times have changed since I joined Dr. Lee's (Standard Process) in 1962! Who knows, but we could wind up being the outright majority in the future. May God continue to bless the Weston A. Price Foundation and everyone involved.

David L Morris, DC
Fresno, California

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

Caustic Commentary

Sally Fallon Morell takes on the Diet Dictocrats

LOWER FAT MILK, HIGHER FAT CHILDREN

The practice of feeding reduced-fat milk to growing children, even restricting full-fat milk in day care centers, in order to prevent weight gain, has no scientific basis, as shown in several studies carried out in Scandinavia and the U.S. Now we have another one—this time from Canada. Researchers followed over twenty-seven hundred children, ages one to six. Children who got full-fat milk had a lower body mass index and also higher vitamin D status (*AJCN* 2016 Nov 16). Children who drank full-fat milk were less likely to end up hungry, and less likely to snack on high-calorie foods, suggested the researchers. In U.S. schools, children have a choice of lowfat milk, which they hate, or chocolate milk made with skim milk powder and high fructose corn syrup—often containing more sweeteners than sodas!

MILK GLUT

Conventional milk producers are groaning under the lowest milk prices in years, due to a massive milk glut. Overproduction is the result of a 2014 spike in milk prices, which encouraged dairy companies to add more cows to their herds. The year 2016 saw an increase of forty thousand cows in the U.S. and even a slight increase (1.4 percent) in production

per cow. Prices have declined 22 percent to just over sixteen dollars per hundredweight, or a dollar thirty per gallon—far lower than the cost of production. As a result, many more dairy farms have folded—mostly small dairy farms—because the massive confinement operations are propped up with subsidies. What a contrast with the raw milk situation, where demand is increasing and farmers receive anywhere from five to twenty-four dollars per gallon.

NEW PLASTIC MENACE

We recently published an article by Becky Plotner on the dangers of fleece garments made from recycled plastic bottles—namely that chemicals like BPA from the plastic can

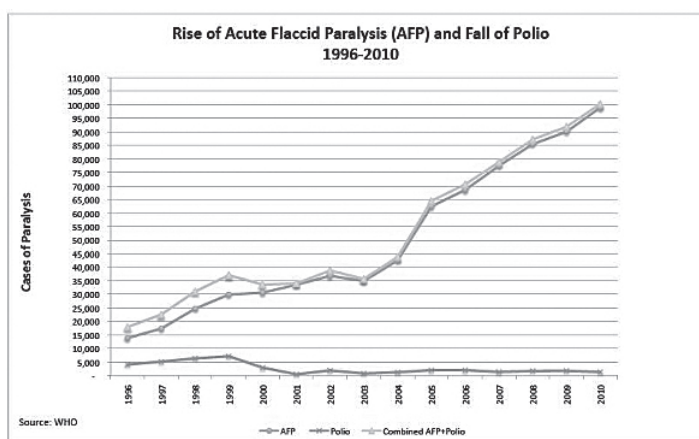
be absorbed into the skin (Fall 2016). Now another problem with recycled garments has emerged. Every time a fleece is washed, it sheds microfibers: a single fleece jacket can shed as many as two hundred fifty thousand microfibers—about the weight of a ping pong ball—every time it is washed in a machine. Certain acrylic garments can release up to seven hundred thousand microfibers. These tiny plastic filaments accumulate in surface waters where fish and other animals swallow them. What this does to marine life—and to the humans who consume it—is the subject of study, but early research indicates that with this non-biodegradable material in their guts, worms, shrimp and crabs eat less, making them more vulnerable to disease and decline. These revelations are an embarrassment to trendy companies like Patagonia, which produces politically correct fleeceware made from plastic. The company has commissioned studies “to try to understand from scientists what exactly our contribution

was to the problem,” said Jill Dumain, director of environmental strategy at Patagonia (*Washington Post*, November 1, 2016).

ANOTHER NAME FOR POLIO?

Doctors are “scrambling” and “desperate” to find the cause of a “mysterious polio-like illness,” termed acute flaccid myelitis

(AFM), which is occurring in increasing numbers, leaving hundreds of children paralyzed and many dead. According to a recent CDC press release, AFM has sickened eighty-nine people, mostly children, across thirty-three states so far this year. A report from India indicates a large increase in AFM cases from 2000 to 2013, and the only factor associated with AFM, which is clinically indistinguishable from polio paralysis but twice as deadly, was the number of polio vaccine doses received. Similar findings come from Nigeria and Congo. The National Polio Surveillance Project data show that the polio eradication program has increased paralysis among children—from about three thousand cases yearly in 1997 to sixty-one thousand cases in 2012, most classified as



Caustic Commentary

AFM instead of polio. Other names for polio now include acute flaccid paralysis (AFP), transverse myelitis, viral or aseptic meningitis, Guillain-Barré syndrome, Chinese paralytic syndrome, chronic fatigue syndrome, epidemic cholera, cholera morbus, spinal meningitis, spinal apoplexy, inhibitory palsy, intermittent fever, famine fever, worm fever, bilious remittent fever, and ergotism (vaccineliberationarmy.com, Nov 4, 2016).

VITAMIN A FOR MEASLES

The current justification for giving children up to fifty vaccinations before they enter school, including one in the first week of life, and up to nine for each of the two-, four- and eight-week pediatrician visits, is to counter the threat of measles. While there have been zero deaths from measles in the U.S. during the last ten years (and over one hundred deaths from the measles vaccine), it is true that measles causes thousands of deaths in impoverished Third World nations. The World Health Organization (WHO) advises: “All children in developing countries diagnosed with measles should receive two doses of vitamin A supplements, given 24 hours apart. This treatment restores low vitamin A levels during measles that occur even in well nourished children and can help prevent eye damage and blindness. Vitamin A supplements have been shown to reduce the number of deaths from measles by 50%.” Unfortunately, most practitioners in the U.S. remain ignorant of this miraculous treatment. A recent Medscape quiz for health care professionals asked, “Which of the following supplementations has been associated with reductions in morbidity and mortality in patients with measles?” Only 44 percent of those who answered knew that the correct answer was vitamin A. And the WHO is putting its dollars into vaccination campaigns, not vitamin A supplementation, to the tune of one and one half billion dollars per year. Despite mass vaccination efforts, measles is still a cause of death for many children worldwide. The WHO reports that even after massive vaccination campaigns, almost one hundred fifty thousand children died after contracting measles in 2013 (examiner.com, Feb 16, 2015).

MORE REASONS TO EAT BACON

A recent analysis of pork products has found them to be rich sources of vitamin K₂—Dr. Price's very own X Fac-

tor. Both processed and fresh pork cuts contain a range of vitamin K₂ isomers, with the highest levels as MK-9, MK-10 and MK-11, forms created by intestinal fermentation. The total K₂ contents corresponds with fat content—the fattier the meat, the higher the K₂ (*J Agric Food Chem.*, 2016, 64 (22), pp 4531–4535). That means bacon and lard—preferably from pastured animals—are great foods for pre-conception, pregnancy and growing children, to ensure wide facial development, and for adults, for protection against heart disease.

CALCIUM SUPPLEMENT DANGERS

Getting your calcium from supplements increases your risk of heart disease, while getting your calcium from food decreases your risk of heart disease. These are the findings of researchers from Johns Hopkins University, published in the *Journal of the American Heart Association* (2016;5:e003815) For the study, researchers analyzed detailed information from the Multi-Ethnic Study of Atherosclerosis, a long-term research project funded by the National Heart, Lung, and Blood Institute, which included more than six thousand people seen at six research universities. Their study focused on about twenty-seven hundred of these participants who completed dietary questionnaires and had two CT scans ten years apart. A group of 20 percent of participants with the highest total calcium intake, greater than 1,400 mg daily, was found to be on average 27 percent less likely than the 20 percent of participants with the lowest calcium intake, defined as less than 400 mg daily, to develop heart disease. But when just the 46 percent who used calcium supplements were considered, a 22 percent *higher* risk of having coronary artery calcium occurred. “There is clearly something different in how the body uses and responds to supplements versus intake through diet that makes it riskier,” said co-author John Anderson, PhD. “It could be that supplements contain calcium salts, or it could be from taking a large dose all at once that the body is unable to process.” In a similar fashion, dietary calcium intake may decrease risk of kidney stones, whereas calcium supplementation may increase that risk.

SOMETHING CHANGED

The Morton Collection of Human Skulls at the Penn Museum, collected from many eras and locations, shows the change from perfect dentition to buck teeth and weak chins

Caustic Commentary

that occurred around the time of the Industrial Revolution. Curator Janet Monge notes, “Nobody in the past had dental problems, like we are talking nobody.” Describing a five-thousand-year-old specimen from Iran, she points out the straight, white symmetrical teeth and wisdom teeth at the back of the jaw. “It’s like the upper jaw, the maxilla, the lower jaw the mandible are actually kind of perfectly in unity with each other and the interesting thing is that was everybody in human history,” says Monge. The transition to crooked teeth happened very quickly, and almost globally, about one hundred fifty years ago. Monge believes the cause was lack of breastfeeding among women who went to work in factories; another theory is that people started eating soft food (newsworks.org, Sept 14, 2016). Nobody in the academic world wants to talk about the elephant in the room—the fact that in modern times, with the advent of refined sugar, white flour, vegetable oils and pasteurization, our diets became much less nutritious. Excellent facial structure is evident the day a baby is born—before he has had a chance to nurse or eat anything, whether soft or hard.



Perfectly formed skulls at the Penn Museum

ONGOING STATIN WARS

The editors of the two top medical journals in the UK find themselves in the spotlight over statins. The current round of controversy has its origins in the 2014 publication in the *British Medical Journal (BMJ)* of two articles highly critical of cholesterol-lowering drugs. Statin defender (and recipient of hundreds of millions from the pharmaceutical industry) Rory Collins demanded that the *BMJ* retract the article, which the publication declined to do, though it did issue corrections. Then in September, the *Lancet* published a thirty-page review article by Collins and colleagues which claimed that the benefits of statins have been underappreciated and the adverse effects of statins have been overstated by both the medical community and the public. Among the many comments on the controversy published in both journals is a *BMJ* blog post by Richard Lehman (Sept 12), who raises questions about the blithe dismissal of statin side effects. “Muscle pain and fatigability are not a figment of misattribution and public misinformation,” he writes. “They are

too prevalent and recurrent in people who desperately want to stay on statins. Rather than discount a widely observed phenomenon, we should ask why there is such a mismatch with reporting in the trials.” He could have added that the true benefit of statins is at best four added days of life for every five years of treatment, with all the debilitating side effects.

BUTTERGATE AT THE AHA

Intrepid journalist Larry Husten, reporting from the journalists' lunch room at the November 2016 American Heart Association (AHA) meeting in New Orleans, noted that

by serving sugary desserts, the AHA wasn't living up to its own nutrition guidelines. Far worse, he scolded, the AHA was punishing reporters by serving margarine instead of butter, and skim and lowfat milk instead of whole milk or half-and-half for coffee. Journalists arriving the next day found a bowl of butter packets on the buffet table. However, after a detailed investigation, Husten

learned that the AHA had not, in fact, “suddenly altered its policy to allow butter and other saturated fats inside the *sanctum sanctorum* of the AHA. Instead, it turned out, one reporter, Matt Herper from *Forbes*, had quietly asked a food service employee for some real butter. This employee then took pity on Herper and the rest of the suffering press corps and on his or her initiative put out enough butter for everyone.” But in fact, Husten's story from the day earlier did have an effect—the sugary desserts had disappeared (though the lowfat cream cheese remained). Instead the journalists got bowls of fruit (cardiobrief.org, Nov 15, 2016).

FOR SCIENTISTS AND LAY READERS

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

Fueling the Modern Athlete

By Ben Greenfield

I used to do bodybuilding, posing on stage in the equivalent of my mom's very small underwear. I ate copious amounts of food. I used to suck down protein shakes all day and eat tuna fish out of the can. Those were my two primary meals, and that was how I got introduced to the 70 percent-plus protein-based, very lowfat, very low-carb diet. I did put on a lot of muscle but didn't understand the risks.

All this got me interested in studying nutrition. I earned a master's degree at the University of Idaho in biochemistry, biomechanics and exercise physiology. But my real interest was making my biceps bigger. Then as if that were not unhealthy enough, I got into the Iron Man triathlon, which I did for a decade. Iron Man is one of those sports of attrition; as in baseball, if you don't fuel right, you get tired out and go to the dugout and grab some sunflower seeds. In these sports, you need to figure out the fueling required for intense exercise or you won't last long.

Over time I began to use more of the ancestral nutrition principles, and contrary to predictions, I did not get slower. I actually got faster, better and healthier.

Before going to high-protein, I swallowed hook, line and sinker what I read in *Runner's World* and what a lot of my coaches were telling me. The dogma is carb depletion followed by a 55-70 percent carbohydrate-based diet including carb loading a week or two before the race.

Carb depletion and loading is a process that bodybuilders use to build the appearance of muscle. The reason they first deplete carbs is to lose the water beneath the skin and consequently lose every glycogen molecule in the muscle cells, because the glycogen process requires water. This makes the muscles more definite and hard looking. After you deplete your carbs, your muscles will look flat and then it is time to load. This means you have to eat carbs to replenish your glycogen stores in your muscles and make them fuller and tighter, but now with less water under the skin.

So, for example, if you have a race on a Saturday, the previous week you first totally restrict carbohydrates for a couple of days and then you go carba-holic for about six days, gradually getting up to 90 percent carb intake before the race.

This process does actually work, but there are side effects, including gut problems, hormonal depletion and many other issues.

After bodybuilding I got into running. Over time I began to use more of the ancestral nutrition principles and, contrary to predictions, I did not get slower. I actually got faster, better and healthier. Now, I do obstacle course racing professionally, which basically means I do races where at the end I jump over a fire that's made to look a lot larger in pictures than it actually is. It's actually a very tiny fire but it looks cool with all the smoke and flames.

Like the triathlon, these races are grueling. I did one recently that was seventy-two hours

long and one that was a thirty-two-mile race. The sport is an interesting mix of aerobic and anaerobic exercise. You burn a high amount of fat to maintain your aerobic status for a certain period of time but then that's mixed with some really high glycolytic efforts where you're delving into an intense amount of carbohydrate utilization. You can't just do high-fat ketosis, you need both carbs and fats.

Imagine the meal at the Iron Man pre-race banquet. It is a cattle feed of Gatorade, pasta and huge white bread rolls and everything else that endurance athletes are taught to eat. You arrive and get four Gatorade bottles and mounds and mounds of pasta. That's the way that I fueled my

body for years, and that is how the majority of Iron Man marathoners eat.

Bikers do it differently. They use electrical tape to attach a bunch of gels to their top tube or have others ways of carrying gels when riding. These gels are based on fructose and maltodextrin (see sidebar p.16). The ingredient list looks awful, but there is kind of a science behind these blends and they work. Gatorade Sports Science Institute is one of the leading researchers on how athletes oxidize fuels during exercise. They have found that a blend of fructose and maltodextrin will oxidize at a higher rate than an isolated sugar. These gels are engineered for high performance.

Initially, when I was using gels I would use four per hour or about forty over the course of the day—that's forty packets of sugar and caffeine—along with some extra energy bars and Coca-Cola! That's what goes on in the endurance sporting world.

After a race I would have to take Valium to go to sleep at night. After all that sugar and caffeine I suffered from gut rot—basically



Ben Greenfield in bodybuilder days.

leaky gut—and inflammation. I would need to take a couple of pills to get me to turn off. These gels work temporarily like a drug while in the race but afterwards it's horrible. A lot of people think you just collapse in bed asleep after doing an event like this, but not if you follow the conventional fueling advice. You're like a rat on cocaine.

I also did a lot of whey protein isolate mixed with carbohydrates—again, that's the general recommendation. There is a carb-to-protein ratio recommended for athletes to hit that magical twenty-minute post-workout window. It's a three-to-one or four-to-one carbohydrate-to-protein ratio within about twenty minutes after workout. Lots of whey protein isolate mixed with some form of sugar after a workout is considered the gold standard in sports nutrition and I did that for a long time.

And remember that this is for every run, and not just post-workout fueling. There's during-workout fueling at a certain rate per hour and even a pre-workout fueling—because, so the argument goes, in the race you will have to be able to digest those gels so you might as well teach your body to do it on every single run. In my garage I had a whole plastic crate full of fueling belts that would hold tons of gels and flasks. I would go out for runs and training sessions and have all this stuff on board just in case—because you've got to keep dumping fuel into the body.

RECOVERY FOODS?

And then there are the staple “recovery” foods that athletes are taught to eat. One is nut butters. Nut butters are huge in the athletic population, and no one seems to know about rancid vegetable oils. The go-to post-workout fueling for me was half a jar of Jiffy peanut butter to get enough calories.

Then there is bread, and along with that the big bakery cases at the quintessential coffee shop stop on the long cycling rides. This is all quite prevalent in the athletic culture.



The Iron Man pre-race banquet.

Along with the coffee shop stops, there is trail mix. I would eat lots of trail mix. I used to stop at a gas station or convenience store on my bike rides and grab as many bags of trail mix as I could throw into my jersey pocket. These are loaded with sweeteners and vegetable oils.

Chocolate milk is actually being marketed now as the perfect recovery drink because of the three-to-one or four-to-one carbohydrate-

to-protein ratio! My triathlon team

used to train at Giant Stadium in New York at the same training center as one of the richest National Football League teams. What did they have for “healthy” foods at their training table? Gatorade, Gatorade post-workout bars, Gatorade pre-workout gels, Gatorade during-workout gels, and also lots of chocolate milk since it is considered the most natural recovery beverage.

And then there are energy bars—there are lots of issues with these. Ensure is also popular. Some of the best Iron Man triathletes consume Ensure during the race and training sessions. They drink three to five bottles a day of “doctor-recommended” Ensure, along with Red Bull. These are the two main items these athletes drink out of cans. And these athletes are fast—never mind the joint pain and connective tissue degra-

“DOCTOR-RECOMMENDED” ENSURE INGREDIENTS

Water, Corn Maltodextrin, Sugar, Milk Protein Concentrate, Blend of Vegetable Oils (Canola, Corn), Soy Protein Isolate, Nonfat Milk. Less than 0.5% of: Magnesium Phosphate, Potassium Citrate, Natural & Artificial Flavor, Cellulose Gel, Salt, Calcium Carbonate, Calcium Phosphate, Choline Chloride, Ascorbic Acid, Sodium Citrate, Cellulose Gum, Potassium Chloride, Monoglycerides, Soy Lecithin, Carrageenan, Potassium Hydroxide, Liquid Sucralose, Ferrous Sulfate, Zinc Sulfate, Acesulfame Potassium, dl-Alpha-Tocopheryl Acetate, Niacinamide, Manganese Sulfate, Calcium Pantothenate, Copper Sulfate, Thiamine Chloride Hydrochloride, Pyridoxine Hydrochloride, Vitamin A Palmitate, Riboflavin, Chromium Chloride, Folic Acid, Biotin, Sodium Molybdate, Potassium Iodide, Sodium Selenate, Phylloquinone, Vitamin D3, and Vitamin B12.



dation that are bound to follow. Iron Man champion Chris McCormack once told me that drinking copious amounts of Red Bull and Ensure were his training secret.

FLAWED HYPOTHESIS

The science of this fueling philosophy is based on the assumption that the human body is able to oxidize only a small amount of fat—storage fat, adipose fats, ketones, medium-chain triglycerides, fats from other sources—as energy during exercise, so most of the energy needs to be provided by carbs. A couple of years ago I participated in a study at the University of Connecticut which looked at a group of athletes who followed a high-fat diet for twelve months, including myself, and compared us with a group of athletes who followed the conventional diet that I have just described. For the study, I ate a diet with 80-90 percent of calories as fat.

In addition to assessing performance, the researchers looked at the microbiome, cholesterol levels and markers for inflammation. Most importantly they measured fat and carbohydrate oxidation rates; they looked at the rate of glycogen depletion and the amount of glycogen left over as stored carbohydrate available after the workout. Storage glycogen is what allows you to lift heavier weights, or gives you a surge during cycling or enables you to jump over the fire at the end of the Spartan race.

The results were really interesting, especially with regards to fat oxidation. The prevailing view is that the human body can oxidize a maximum of 1.0 gram of fat per minute. What they found in the group

of fat-adapted athletes, however, was an average fat oxidation rate of 1.7 grams of fat per minute while still maintaining the body's muscle glycogen levels. In other words, the higher-fat ancestral diet allows the body to oxidize fats to such an extent that you can thumb your nose at a lot of these recommendations of gels, sports bars and energy drinks. But it takes some time to reach that state of fat adaptation. Many of the studies that looked at fats versus carbs for athletes only looked at athletes who had followed a high-fat diet for a short time—three days to a couple of weeks.

The main point is that a lot of the studies used to market sports gels are actually based on the flawed hypothesis that the human body is only able to oxidize one gram of fat per minute, and therefore we must keep carbohydrates coming down the hatch. The human body only stores about 1500-2000 calories as glycogen, and if it were true that it can only burn one gram of fat per minute, then it has to rely on carbohydrates.

Be aware though that an extreme fat diet can cause hormone problems. Over time, I have been able to achieve a high level of performance

GU ENERGY GEL LABEL

“Get carbs in your system instantly with GU Energy Gel. Patented carbohydrate blend gives your body the essential requirements it needs for long-lasting energy. Just open it, squeeze it and swallow. Goes down easy and goes to work fast, so you don't have to slow down.

- Contains maltodextrin, the best complex carbohydrate for delivering energy to working muscles
- High-quality, patented carbohydrate blend: 80% complex/20% simple
- Fructose builds energy level back up, maltodextrin is sent straight to the muscles, and both help maintain glucose levels over time
- Vital electrolytes keep blood chemistry in line and hydration levels stable
- Calcium promotes muscle performance
- Citrates (potassium citrate, sodium citrate and citric acid) help speed the conversion of carbs into energy molecules and reduce performance-sapping acid build-up in muscles
- Branched chain amino acids (leucine, valine and isoleucine) act as another fuel source, aid in recovery and improve mental performance
- Histidine, an essential amino acid, acts alongside the citrates as a buffer to neutralize lactic acid build-up in muscles
- Antioxidant vitamins C and E defend muscles from assault by free radicals
- Anti-inflammatory chamomile and stomach-calming ginger
- Caffeine helps metabolize fat and provides an extra energy kick (select flavors)”



A runner carries his gels!

with few fluctuations in blood sugar by eating a diet that is 50-70 percent fat. With a level of fat higher than that, my T_3 levels dropped really low because I didn't have enough glucose for T_4 -to- T_3 conversion. I started to get some joint degradation and frequent injuries, probably because I didn't have a lot of the glycol proteins for the proteoglycans an athlete needs for repair and recovery.

Worse, my testosterone levels went down. There have been two periods in my life when I've lost my libido and my testosterone levels dropped. Ironically, one time was when I was a bodybuilder and looked like what some consider the ultimate sex object. But it also dropped really low when I was following a very high-fat diet with few carbs, because you need a certain amount of carbohydrates for adequate metabolism and adequate activity of the testosterone-producing leydig cells and the testes.

HEALTH VERSUS PERFORMANCE

Fructose and maltodextrin, Ensure energy drinks and Red Bull can make you go fast, but there are other approaches that can help you go just as fast while also maintaining your health. Unfortunately, the information isn't known in the sports world, largely because of the enormous influence wielded by the corporations. Furthermore, athletes are not looking at the long-term consequences of their diet; they are only asking, "Does this make me go fast?"

In the long run, you can expect to see joint pain, inflammation and diabetes. Also, bodybuilders age early. If you have been to a health and fitness show where there are bodybuilders

and fitness people, they look awesome from fifty feet away, but not when you get closer. Typically their faces are wrinkled, inflamed and red. The skin on their arms looks like the skin of an elderly person. This is caused by connective tissue degradation.

In the short run you see things like small intestine bacterial overgrowth, candida, yeast and fungus. I see a lot of gut issues in these athletes, even in young athletes. Fructose is a readily fermentable carbohydrate—it ferments very quickly. Maltodextrin, on the other hand, is a long-chain carbohydrate; it takes a little while to get broken down. It needs and attracts a lot of water into the gut; the result is the diarrhea, gas and bloating that you athletes sometimes get two to three hours into a marathon or bike ride. The mix of complex long-chain carbohydrates with a simple carbohydrate like fructose is a recipe for an awkward and uncomfortable disaster.

I've walked around the lab at the Gatorade Sports Science Institute. What were they looking at? They were watching a bunch of athletes running on treadmills. The researchers stand at the back of the treadmill and wait to catch them when they fall off. They're not asking about their digestive health. All they want to know is, "How fast did you run?"

Copious amounts of caffeine is also problematic. The typical gel product contains 80-120 mg of caffeine per serving and athletes are taking three or four of these per hour. Caffeine can help shut down pain during exercise. Lots of caffeine actually works, but the downside is adrenal fatigue. Large amounts of caffeine is a constant attack on the adrenals. However, I

Athletes are not looking at the long-term consequences of their diet; they are only asking, "Does this make me go fast?"

WATER AND ELECTROLYTES DURING TRAINING?

The theory behind drinks like Gatorade is that athletes need lots of electrolytes during training. Dr. Timothy Nokes, author of the book *Water Logged*, disagrees. He describes studies of military personnel doing gruelling forty-eight-hour marches. They found that plasma electrolyte levels in the absence of electrolyte intake stay just as high in these people as in those taking in copious amounts of salt capsules, salt sticks, Gatorade and other sources of electrolytes. Apparently the body stores large amounts of electrolytes, and it's actually not necessary to consume a large amount of salts and electrolyte beverages during a workout to avoid cramping. Cramping is actually more often caused by things like soft tissue adhesions, by increases in sympathetic nervous system drive, or by long-term magnesium deficiencies. If you're eating a healthy diet high in minerals, you will be getting decent amounts of magnesium and other electrolytes. I read *Water Logged* a couple of months before competing in my fifth Iron Man Hawaii triathlon and decided I would test his hypothesis. Before the race I used lots of sea salt, coconut water and food sources of magnesium. For the actual race, I didn't take electrolyte capsules at all—no salt sticks, no salt capsules—and that's considered to be suicide in a race like that. But it was fine. I didn't cramp or have any issues whatsoever. I believe Nokes is on to something when he insists that we need fewer electrolytes during exertion than we've been led to believe.

When
you are
exercising
heavily, you
just can't
digest
complex
foods like
ribeye steaks
or huge
salads.

discovered that one of the fastest ways to strip excess fat off the body is to exercise fasting and aerobically with caffeine in the system. The weight just melts away. Fortunately, you don't need much caffeine to make that happen.

WORKOUT FOODS

So what should athletes eat during workouts and races? Heavy and non-portable foods won't do. We can't shove aluminum-wrapped sweet potatoes into our pockets for a run or a bike ride; we can't take a giant chunk of grilled liver that's been drenched in eggs and flour on a run with us. Also, when you are exercising heavily, you just can't digest complex foods like ribeye steaks or huge salads. Instead, you blend, you juice, you take liquids, you mash your carbs. You'll need easy-to-digest proteins such as raw milk, colostrum, eggs, and even fish. Easy-to-digest fats include coconut butter, coconut oil, coconut milk and medium-chain triglycerides.

Should athletes consume liquids or solids while training? Research has shown that for non-jarring sports—cycling, weight-lifting or swimming—solid food is fine before a workout. But for jarring or bouncing sports like running, liquids and smoothies are better.

Real Food Portables by Biju Thomas and Allen Lin has good ideas for portable food that is not too heavy. There are recipes for things like savory rice cakes sprinkled with bacon and eggs and wrapped like sushi rice. These are used on the Tour de France and similar races.

Where do I get my carbs? My wife makes traditional sourdough bread using non-GMO red wheat berries. A 30-40 percent carbohydrate intake with a higher amount of carbohydrate intake in the evening works well for me, and for me it is usually sourdough bread. I also like a sweet potato mash.

Another source of carbs for me is red wine. I often consume a glass of red wine before—not with—my evening meal. The wine helps replenish liver glycogen because muscles actually lack the enzyme necessary to take fructose and store it as glycogen. Things like alcohol and fruit are best eaten when your liver is in a slightly glycogen-depleted state post-workout.

Usually every morning I start with a giant smoothie. I take copious amounts of plant mat-

ter, normally coconut oil and seeds and nuts and blend until smooth.

Lunch is often a big salad with sardines or some form of fat, eggs, seeds or nuts, dressed with olive oil, coconut oil or avocado oil. I also eat a lot of shirataki noodles, which are made with Japanese yam.

For recovery, I consume anti-inflammatory juices made with carrot, turmeric, ginger and lemon, sometimes with added olive oil, a spoonful of amino acids and sea salt.

Coconut milk parfait is a great food for athletes. I'll mix full-fat coconut milk with chocolate flavoring, sometimes I add spirulina or chlorella and some chia seeds. Usually my pre-workout meal is whatever coconut parfait is in the freezer. It's full of medium-chain triglycerides and a little bit of protein from nuts or seeds.

Avocados are another good workout food. In many cases I'll chop an avocado in half, sprinkle it with olive oil and sea salt, and eat it with a spoon. This works well for a lot of athletes. You can also mix avocado with vanilla, cinnamon and a little coconut milk. After heavy training, this offers a chocolate-pudding feel without all the metabolic damage from sugar.

As for the energy gels that athletes use during races, there are a lot of good alternatives that are not based on fructose and maltodextrin. They are usually based on coconut butter or raw nut butter. However, you need liquid with these because they make your mouth really dry.

You can make your own gels from honey, almond butter, banana and lemon juice. The problem with these homemade gels is how to consume them without making a huge mess. You can put it into a ziplock bag but it's hard to squeeze the ziplock bag into your mouth. So I usually stick with the more natural gels that can be purchased.

The key is to eat real food, most of which you have prepared yourself. For both performance and overall health, athletes need real fat, real carbohydrates real protein—all from real food. ☺☺

MY SUPERFOODS

DAIRY FOODS: I have two Nigerian dwarf goats and I get raw camel milk shipped to my house. I'm a huge fan of raw milk and if an athlete has trouble with cow's milk (as I do), I suggest goat or camel milk. I also take colostrum capsules. Studies show that colostrum can reduce gut permeability in the heat in exercising athletes. It's also good for insulin-like growth factor and growth hormone production. So rather than drinking conventional chocolate milk or injecting growth hormone, you can use raw milk and some type of colostrum.

BUTTER OR GHEE: I prefer ghee because of a slight dairy sensitivity. Whichever you use, it is a very important nutrient-dense fat.

BONE BROTH is definitely a staple for joint health and daily electrolyte intake. I started using bone broth rather than water the last couple years in the Iron Man triathlon. It actually digests really well; it seems to stay really stable in both cold and hot conditions and it's almost a perfect natural form of Gatorade.

ORGAN MEATS: I eat organ meats at least once a week. I've found that most of the thyroid and hormonal issues that can happen with excessive training just disappear once you start including a lot more of the snout-to-tail, the whole animal. If I'm in a really intensive training cycle and trying to avoid lots of those proteins that can be more difficult to digest I'll take liver capsules. For the recovery aspects, one of my favorite snacks is bone marrow on sourdough toast. When my wife makes chicken broth in the crock pot, I eat all the bones. I literally chew all the knuckles off, I eat the entire vertebral column, everything.

SEA SALT: I consume a lot of sea salt. I used to go to bed at night after long days of training hearing my heart pounding in my ears, often that's an early sign of adrenal fatigue and mineral deficiency or low aldosterone production in athletes. I started using copious amounts of sea salt and all that went away almost immediately. I found that if you keep your electrolyte stores topped off then in many cases you don't need salt tabs or electrolytes when performing.

EGGS are the perfectly packaged protein, a really digestible alternative to whey protein isolate or casein or a lot of these proteins that are recommended to athletes. Eggs actually digest a lot better for me than steak or sausage on the night before a big workout or race.

SOAKED SEEDS AND NUTS: In my pantry you'll find mason jars full of nuts that have been soaked. Brazil nuts are a favorite for their zinc and the ability to help with hormone production. Sometimes I'll dehydrate them in the food dehydrator. Another favorite is chia seeds. For big races now I make a chia seed slurry with sea salt, lemon juice and stevia or honey.

BERRIES: I don't eat a lot of fruit, but when I do, I prefer lower-glycemic index and anti-oxidant rich fruits such as berries.

COCONUT: My primary fats for exercise are coconut oil or coconut-based fuels, rich in medium-chain triglycerides.

PEMMICAN: My kids go to school with pemmican in their lunch boxes. It's another big staple in my diet, which I have found to be especially good for the long aerobic endurance efforts.

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Restoring Male Fertility

By Veronica Tilden, DO

It ought to be easy to get pregnant, right? After all, most people spend their teens and most of their twenties doing everything they can to prevent it. Young people are more afraid of inappropriately getting pregnant than just about anything else. But in reality once they start trying to conceive, approximately 25 percent of couples are having trouble.^{1,2} The human reproductive system is prolific under ideal circumstances, but it is also fragile, and a lot can go wrong.

The goal of this article is to explain the basics of male fertility and describe what can disrupt it, and then to present some simple ways to improve health and regain that fertility. Three very important factors are improving nutrition, reducing toxic exposures and lowering stress levels. After just a few months of diligent efforts in making these changes, couples often achieve pregnancy even after having tried unsuccessfully for a year or more. Though the focus of this article is male fertility, these factors apply to the health and fertility of women as well as men.

Fertility for a man is defined as the ability to impregnate a woman and produce offspring.

Then what is infertility? A couple is considered infertile if they have not conceived after one year of frequent, unprotected sexual intercourse (if the woman is under age thirty-five). When older than thirty-five, this diagnosis is given after six months, as fertility declines significantly in women after this age.

When a couple has trouble conceiving, it is usually the woman who is blamed. But in reality, half the time the man has a problem. When couples undergo medical workups, 40 percent of the time the problem can be attributed to the woman, 40 percent of the time to the man, 10 percent of the time to both and the other 10 percent no specific problem can be identified. A couple must be considered as a unit, and both need to investigate the cause of infertility until the problem or problems are uncovered or resolved.

HEALTH

Reproduction is an expendable biologic function to the human body, in fact to all living systems. If a person is barely healthy, why would the body want to conceive, grow and bring another life into the world? So it

should be no surprise that the best way to be fertile and have a healthy baby is to have vibrant health. By putting the focus on health, fertility problems often resolve themselves.

Many health problems, and the medications used to treat them, can affect a man's fertility. The most common are endocrine disorders (diabetes, thyroid, adrenal), high blood pressure, heart disease, liver or kidney disease, depression, fibromyalgia, chronic pain, cancer treatments, cystic fibrosis, sickle cell anemia, celiac disease and many more. No medication taken for these conditions, over-the-counter or prescription, should be considered safe.³ All medications should be discussed with the prescribing physician from the point of view of health, fertility and effects on the fetus. If the

man has a medical condition, it is important to consider it as part of improving health and fertility.

CAUSES OF INFERTILITY

The most common cause of infertility in men is abnormal sperm, accounting for 90 percent of cases. The other 10 percent includes trauma to the anatomy, varicocele, immune factors, sexual dysfunction and other less common problems. But 25-40 percent of the time no specific reason can be found.

How is sperm tested to determine whether it is abnormal? The man must provide a sample of his ejaculate and it is sent for semen analysis. This analysis evaluates the sperm count (normal is greater than twenty million), sperm motility and shape, and semen volume. At least two different samples should be examined one month apart, and three are best. Sperm varies from day

to day, and one test is not enough. In reality, looking at sperm under the microscope is not a very accurate way to assess their ability to fertilize an egg, but it is the best test currently available.



A healthy sperm entering the ovum.

PATERNAL AGE

Today's high infertility rates are exacerbated by the fact that many couples delay having children, and are trying to conceive when their fertility is declining. The top reasons given for this delay are the desire to focus on careers and an inability to afford a child. Unfortunately, decisions to delay often ignore the realities of age and reproduction.

It is true that men can remain fertile until old age and have fathered children into their eighties. But the fact is that sperm counts do decline with age. This is more likely to affect fertility if counts were below normal for a particular man when young.

Research shows that the risk of fathering a child with health problems increases after age forty. The cut-off age for donating sperm is thirty-five years. Older age of the father has

By putting the focus on health, fertility problems often resolve on their own.

been associated with several congenital disorders (such as a cleft lip or palate), higher rates of schizophrenia and autism and decreased intellectual capacity in offspring.⁴

Age is often associated with a decrease in sexual function for men. Typically, men find it more difficult to get and maintain an erection, erections are less hard, ejaculatory force decreases, and it takes longer between ejaculation and the ability to obtain another erection. It is believed that these changes affect fertility only indirectly, as when the sexual dysfunction results in a decrease in sexual activity or if the man has marginal fertility for other reasons.

MEDICAL TREATMENT

If a man is under forty and has no obvious medical problems, then he should begin by focusing on achieving vibrant health. If he is basically healthy and already eats fairly well, it may take three to six months to see changes. If he has a poor diet, high stress levels and has been exposed to many toxins, it may take twelve months to two years to recover adequate health to be fertile. Do not be in a hurry; the healthier a man is at the time of conception, the healthier the child will be.

If a man is over forty, he should focus on his health, and at the same time get help from a qualified medical practitioner. A team approach

may include a primary care doctor, a fertility specialist, a holistic physician, an acupuncturist, an herbalist, and others.

Most doctors who work in the current medical system have little understanding of how to support health or how to identify and treat the true causes of health problems. The primary care doctor will probably do a history and physical exam, lab tests and a semen analysis. This is a good place to start. Family practice training does not include fertility treatment, so the man may have to insist on a referral to a fertility specialist. Typical treatments that are available at fertility clinics include drugs, artificial insemination or some type of in vitro fertilization (IVF). These are necessary and appropriate in only a small percentage of patients, yet are often used for all patients because they have nothing else to offer. When truly needed, thank goodness for modern medical technology.

MACRONUTRIENTS FOR FERTILITY: FATS, CARBOHYDRATES AND PROTEINS

High-quality fat, carbohydrate and protein are all needed for fertility.

FATS, particularly saturated animal fats, are critical for the production of testosterone and other hormones. These fats also regulate the immune system, protect against inflammation, support cell membrane structure, help assimilate nutrients, and serve as a back-up source of energy (after carbohydrates). Approximately 55 percent of daily calories should come from fat, mostly animal fat. For a male eating 2500-3000 calories per day, this translates to about ten tablespoons of fat per day. Remember that fat occurs naturally in many foods and added ones should be flavorful and highly nutritious fats. Sources of animal fats include meats, egg yolks, butter, ghee, whole milk dairy products, bacon, duck and goose fat, cheese, seafood and fish liver oils. Good-quality fats from plant sources include coconut oil, olive oil and palm oil. Avoid all industrially processed fats and oils including margarine, tub spreads, shortenings, cooking oils, fried foods and foods containing these dangerous modern fats and oils. All polyunsaturated oils should be kept to a minimum of less than 4 percent of total calories, with a good balance of omega-3 to omega-6.

CARBOHYDRATES' main functions are as a source of energy for the body and as storage for future energy needs. Current thinking among some athletes and fitness fans is that we don't need carbohydrates in the diet. But carbs are essential for sperm production, passing DNA to offspring, thyroid function, cell structure, immune function and digestion. Approximately 30 percent of daily calories should come from carbohydrate foods including vegetables, roots, tubers, legumes, properly prepared grains, fruit and small amounts of natural sweeteners. Avoid all refined carbs, such as white sugar, high fructose corn syrup and white flour.

PROTEINS are used by the body for making hormones, structural growth and repair, for the chromosomes that pass DNA to the child, and as a back-up source of energy (after carbohydrates and fat). About 15 percent of daily calories should come from proteins. Amounts above 20 percent are unhealthy and have been shown to be associated with kidney disease, and increased cardiovascular and cancer mortality.⁶ Proteins are needed every day and cannot be stored. Food sources of proteins from animals include meat, seafood, eggs and dairy. These contain all of the essential amino acids (called a "complete" protein) and are easily digested. Good-quality red meat (with the fat), organ meats, whole raw dairy foods, fish and shellfish should be included in the diet with every meal. Proteins from plant foods must be properly combined and eaten in the same day to provide the full complement of amino acids. Avoid all protein powders—these are highly refined and contain damaged amino acids. They can also rapidly deplete vitamin A.

FERTILE WINDOW

A very important female factor that can prevent even the healthiest couple from conceiving is the timing of intercourse. To get pregnant a couple must have sex when the woman is fertile. Though it seems obvious, this can be the main reason couples are unsuccessful. Most women do not actually understand their reproductive cycles, and certainly the man cannot be expected to know this for her. In a study of women actively trying to get pregnant, only 13 percent could correctly identify their fertile days.⁵

There are typically six days during any one particular cycle when a woman is most fertile. These days are known as her “fertile window.” They are the five days before and the day of ovulation, when the egg is released. Miraculously, the sperm is kept alive within the woman’s body for these days. The couple needs to have sexual intercourse during this time. All bets are off if this is not understood; timing can be everything. The online course “Your Fertile Window” from MyPregnancyExpert.com can help women understand how to identify their fertile days and how their own individual menstrual cycles compare to normal.

Couples should have sexual intercourse every day during the woman’s six most fertile days if the man has normal sperm counts. If counts are low, then have sex every other day. In addition, cover your bases by having sex two to three times a week all month, as it is not known exactly when the woman will ovulate. Research shows that an extended period of sexual excitement will increase the amount of sperm present in the ejaculate. Also, men who

ejaculate frequently have been shown to have higher sperm counts and healthier sperm. And this does not have to be from intercourse.

NUTRITION

The foods you eat provide the nutrients that are critical for your health and fertility, as well as your child’s lifelong health. To obtain these nutrients, eat a variety of whole, real, fresh foods drawing from the examples given for each nutrient. Eating the empty calories of processed foods may satisfy hunger and provide misguided pleasure but will not provide what the body needs. Nor will a synthetic vitamin pill.

The body has specific nutrient needs for its biological functions, including fertility and reproduction. First, macronutrients are required—fats, carbohydrates and protein. Then there are essential vitamins and minerals (known as micronutrients), cholesterol and fiber. Additionally, thousands of biologically active compounds are present in whole foods. These include phytonutrients, enzymes, cofactors, antioxidants, and more.

Every food provides its own unique combination of nutrients. A single food is likely to contain fat, protein and carbohydrates plus several vitamins and minerals. The particular combination in that food is what makes it unique.

PLANT TOXINS

Plant toxins are chemicals produced by plants to defend themselves. They include phytates, protease inhibitors, goitrogens, oxalic acid, lectins, saponins and phytoestrogens,

Soy in particular should be avoided, as its estrogenic properties can unbalance hormones.

MINERALS FOR FERTILITY

The macro minerals are those needed in large amounts. These include calcium, chloride, magnesium, phosphorus, potassium, sodium, and sulfur. The trace minerals are needed in very small amounts. Those known to be critical for fertility include cobalt, copper, iodine, iron, manganese, molybdenum, selenium and zinc.

Minerals are essential for many aspects of male fertility, for hormones, to prevent birth defects, and for growth, maintenance and repair. Minerals are depleted by drugs, coffee, alcohol, sodas, sugar, stress and heavy metals. For plants to be a good source of minerals, they must be grown in mineral-rich soils. For animal products to be a good source, the animals must be raised on mineral-rich soils. This is an excellent example of how the health of the entire ecosystem is important.

Key sources of minerals include organ meats, red meat, seafood, egg yolks and raw dairy products. Dark green vegetables, seaweeds, nuts, seeds and grains are good plant sources of minerals.

When low, zinc is often a limiting factor for male fertility, and the best source is oysters, with all shellfish being good as well as beef, liver and poultry. Brazil nuts are an excellent source of selenium. Unrefined salt is an important source of sodium and chloride, as well as small amounts of many other minerals.

VITAMINS FOR FERTILITY

VITAMIN A is critical for the formation of hormones, including all the sex and stress hormones. The Recommended Dietary Allowance (RDA) for vitamin A is 3,000 IU per day, but Weston Price found that healthy primitive cultures consumed many times more of this important vitamin.⁷ The vitamin A complex is depleted by stress, infection, alcohol, drugs and other toxins. Beta-carotene found in plant foods is not the same as vitamin A. Only about three percent is converted to a form of vitamin A, and 45 percent of adults cannot convert any. Food sources of vitamin A include liver and other organ meats, fish and shellfish, cheese, fish eggs, egg yolks, butter and cream. Fish liver oil (such as cod liver oil) is a whole food supplement high in vitamin A if properly processed.

VITAMIN D is another fat-soluble vitamin that is key for reproduction. The RDA for vitamin D is 600 IU per day, but Weston Price found much higher levels in the diets of healthy primitive peoples. Vitamin D is depleted by drugs, stress and calcium deficiency. An excellent source of vitamin D is from the UV-B portion of sunlight shining on the skin. It is essential to spend time in the sunshine on a regular basis and expose as much of the body as possible until the skin turns the lightest shade of pink. Do not sunburn, as it is damaging to the skin and you will not make any more vitamin D. Sunscreen blocks this the production of vitamin D. Food sources of vitamin D include oily fish, shellfish, cheese, fish eggs, egg yolks, butter, cream, salami (beef and pork), bacon and lard. Fish liver oil (such as cod liver oil) is a whole food supplement high in many of the different forms of vitamin D if properly processed. Beware of brands that add synthetic vitamin D.

VITAMIN E complex is critical for the reproductive hormones to function properly, for fertility, and to prevent birth defects. It is depleted by alcohol, tobacco and high amounts of polyunsaturated oils. The RDA for vitamin E is 22 IU per day, but the amount in the diet of healthy people is 400-800 IU per day. Vitamin E is a group of compounds that includes four tocopherols and four tocotrienols. Excellent food sources of vitamin E include nuts and seeds, dark green leafy vegetables, shellfish, fish, animal fats, butter, avocado and grains (only if freshly milled). Wheat germ oil is a whole food supplement high in vitamin E. It must come from a trusted high quality source, be stored properly, and used quickly. Rancid vegetable oils quickly deplete vitamin E.

VITAMIN K₂ (menaquinone), the animal form of vitamin K, is another nutrient absolutely critical for reproductive health. Vitamin K₂ activates proteins and helps place calcium where it belongs, in the bones and teeth (and not the soft tissues). Animal food sources include poultry fat and liver, fish eggs, butter, cheese, egg yolks, and pork fat. It is also found in certain fermented foods, such as natto, a traditional Japanese food made by fermenting soybeans. Almost all forms of vitamin K₂ are produced by bacteria in the human gut.⁸ The plant form of vitamin K is K₁ (phylloquinone); it is found in leafy greens and is needed for blood clotting.

VITAMIN B COMPLEX includes nine separate water-soluble vitamins: B₁ (thiamin), B₂ (riboflavin), B₃ (niacin), B₄ (choline), B₅ (pantothenic acid), B₆ (pyridoxine), B₇ (biotin), B₉ (folate) and B₁₂ (methylcobalamin). They play important roles in cell metabolism, including reproductive health and fetal development. Each functions as a cofactor in metabolic processes or is a precursor needed to make a cofactor. For example, vitamin B₉ is needed for DNA and for aiding the rapid cell division required for sperm production and pregnancy. Vitamin B₁₂ is needed in the metabolism of every cell in the human body. B₁₂ is found only in animal products, and B₆ is mostly in animal products. The B vitamins are sensitive to heat. Food sources for the vitamin B complex include liver and other organ meats, fish and shellfish, fish eggs, egg yolks, raw dairy products, meats, grains, legumes, nuts and seeds, fruit, vegetables and seaweeds. Nutritional yeast contains many B vitamins but should come from a high-quality source and not be fortified.

VITAMIN C COMPLEX includes ascorbic acid, dehydroascorbic acid, calcium ascorbate, sodium ascorbate and other salts of ascorbic acid, rutin, bioflavonoids, factors K, J, P, tyrosinase, ascorbinogen, and mineral cofactors. This list clearly highlights the inadequacy of taking a supplement containing only the ascorbic acid portion of this vitamin complex. The vitamin C complex is a cofactor in many enzymatic reactions, including collagen synthesis. Collagen plays a key role in a man being able to maintain an erection. Vitamin C is required in many essential metabolic reactions and is an antioxidant. It is sensitive to heat and storage. Food sources of vitamin C include fruits (acerola cherries, wild rose hips, guava, kiwi, strawberries, oranges, and papaya), vegetables (peppers, parsley and cilantro), berries, organ meats and raw whole milk dairy.

among others. These toxins make foods more difficult to digest and interfere with the absorption of nutrients. They are present in highest amounts in seed foods, which include grains, legumes, nuts and seeds. Deactivating these toxins is aided by soaking, sprouting or fermenting these foods. Cooking also helps.

Soy in particular should be avoided, as its estrogenic properties can unbalance hormones. A small amount of fermented soy, such as natto or miso is fine. Prisoners forced to eat large amounts of soy foods refer to this as “chemical castration.”

Variety is the spice of life. It is very important to eat a diverse selection of different plant foods. This will help prevent too much exposure to the toxins in a particular plant. Also, each plant has a different complement of nutrients (known and unknown) to offer.

ANIMAL FOODS

All animal foods should come from healthy animals eating their natural diet. These animals provide foods with higher levels of nutrients. Grazing animals should be on rich pastures with nutrient-rich soil. Pigs should have sunshine

and be allowed to forage. Chickens and ducks need access to greens and bugs. And animals from the sea should be wild with free access to their natural habitat. Avoid foods from animals that have been given hormones, antibiotics or other harmful chemicals.

VEGETARIANISM

It is very difficult to get enough nutrients as a vegetarian, especially enough of the fat-soluble vitamins and B₁₂. To get these nutrients, eat eggs, butter or ghee and raw whole dairy products every day. It is critically important to prepare seed foods properly (grains, legumes, nuts and seeds) to get as much nutrition from them as possible. Equally important is avoiding all processed and refined foods that offer only empty calories devoid of nutrition.

Reconsider the choice to eat this way, especially if you are struggling with health or fertility issues. Realize that many animals are killed in modern agricultural production of plant foods. If you choose animals raised as described above, they live a good life, contributing to the health of a farm or ecosystem.

A vegan diet that avoids all animal products will not provide adequate nutrition for healthy reproduction and a healthy child. Children are almost guaranteed to have health consequences related to inadequate vitamins A, D, K₂ and B₁₂. The research of Dr. Weston Price revealed no vibrantly healthy people eating only plant foods.⁹ Many groups of people who at first appeared to eat only plants actually included insects in their diet. Insects are a rich source of the critically important fat-soluble vitamins.

SUPER FERTILITY FOODS

Many cultures valued certain “superfoods” for fertility, and consumed them in preparation for marriage and reproduction. Fertility foods from around the world include:

FISH EGGS: Rich in fat-soluble vitamins, zinc, iodine and special fatty acids, fish eggs are a powerhouse of nutrition and should be consumed by both men and women to increase fertility and build nutritional stores.

LIVER is our best source of vitamin A, as well as many other key nutrients like iron, zinc, B₁₂ and B₆. Poultry liver has the best balance of vitamins A, D and K₂.

OYSTERS are one of the best sources of zinc—along with iodine, B₁₂ and fat-soluble vitamins. Men throughout the world consume oysters for sexual prowess and fertility.

BUTTER is the fat found in nature for growth; it contains many factors that boost fertility. The best butter comes from cows eating rapidly growing green grass in the spring and fall. For maximum fertility, men should consume at least four tablespoons per day of butter from pasture-raised cows.

EGG YOLKS are rich in vitamin D and many other nutrients—they are the fertility part of the egg and should be part of any fertility diet. Best are egg yolks from pasture-raised hens.

COD LIVER OIL is a great supplement to supply vitamins A and D, and also special fatty acids like DHA. Use only cod liver oil that has not been heated to high temperatures and that contains only natural vitamins.

RAW DAIRY PRODUCTS: In early studies, pasteurized milk caused infertility in rats while raw milk restored fertility.

SUPPLEMENTS

Avoid synthetic, isolated vitamin supplements. They cannot replace foods in the diet, and may actually be dangerous.¹⁰ There may be benefits in individual situations for supplementing with minimally processed concentrated whole food supplements. Examples include cod liver oil, high vitamin butter oil, wheat germ oil, seaweeds, zinc and probiotics. Ideally, a qualified health practitioner will help make recommendations.

MEDICINAL HERBS

There are many herbs that may be helpful. It is best to work with a knowledgeable herbalist who understands your individual situation. It is important to have guidance in choosing high-quality herbal products made from the appropriate part of the plant in a way that preserves the active ingredients. It is also very important to use a clinically relevant dose.

MICROBIOME

This article does not attempt to address the very important subject of having a healthy whole body microbiome. Become educated on this subject. The diet should include lacto-fermented foods and bone broth to support healthy microorganisms in the gut. The health of the gut also affects the ability to digest and absorb nutrients. Every day new evidence

reveals the importance of a healthy gut for all medical problems.

ENVIRONMENTAL TOXINS

Many substances that men are commonly exposed to are toxic to health and especially fertility. These chemicals are often directly toxic to sperm. They also can interfere with the delicate balance of hormones in the body. These chemicals are known as endocrine disruptors.

Recreational drugs such as cannabis, cocaine, methamphetamines and the many designer drugs so easily available today should be completely avoided. Alcohol and cigarettes are associated with increased numbers of abnormal sperm.¹¹ Cigarettes are also associated with less ejaculate. The toxicity of cigarettes is aggravated by the many chemicals they contain, including the heavy metals cadmium and lead.

Caffeine leads to adrenal exhaustion, which can adversely affect fertility. No safe level of caffeine has been documented, and sodas are

WHAT TO DO FOR MALE FERTILITY

- Aspire to vibrant health
- Have children before age forty if possible
- Know what days of each cycle the woman is fertile (her “fertile window”)
- Eat a healthy Nourishing Traditions diet high in foods that provide nutrients needed for fertility
- Keep the body as free of toxic exposures as possible
- Keep the testicles cool
- Exercise moderately
- Get sunlight exposure
- Sleep enough
- Be relaxed and happy

WHAT TO AVOID (OR RISK POOR HEALTH AND INFERTILITY)

- Refined and artificial sweeteners
- Refined grains
- Commercial vegetable oils
- Trans fats
- Unhealthy animal products
- Genetically modified foods (GMOs)
- Soy products
- Food additives (preservatives, colorings, flavor enhancers such as MSG, etc.)
- Caffeine
- Alcohol
- Cigarettes
- Drugs
- Microwaved or irradiated food
- EMF (Electromagnetic fields) exposure—phone, computer, wi-fi
- Chemical toxins
- High stress levels

even worse than coffee and tea. Caffeine may also be present in medications, such as over-the-counter headache and cold pills.

Chemical exposure comes from treated water (chlorine, fluoride and more), plastics in many forms, non-stick pans, aluminum cookware, new carpet, paint, upholstery, cleaning products and personal care products. Landscapers, contractors, manufacturing workers and men who have regular contact with environmental toxins are all at risk for infertility. Common exposures are pesticides, herbicides, solvents, heavy metals, radiation and heat.³

Sexual lubricants, douching products and vaginal deodorants should also be avoided, as they can interfere with fertility.¹² These can be directly toxic to sperm, or may contain endocrine-disrupting chemicals.

A very important toxin to male fertility is radiation. The dose is cumulative, adding up from all exposures of a lifetime. X-rays and CT scans are the most obvious source of radiation. Exposure also comes from airport scanners and the naturally occurring radiation from high elevation air travel. There are increasing levels of background radiation from worldwide nuclear accidents. And perhaps worst of all is electromagnetic field exposures (EMF). This comes from computers, cell phones, wi-fi, cordless phones and common electronics such as an alarm clock.

Modern inventions that expose us to radiation have become such a seemingly necessary part of daily life. What can be done to lower this

exposure? Start simple. Do not put a laptop computer in your lap and do not put a cell phone in your hip pocket. Use your phone on speaker or with a headset. Turn off your phone, computer and wi-fi at night, and get a battery clock for your bedside. When you fly, opt out of the scanner and leave time for a pat-down. If you travel frequently, get approved for pre-check so you only go through a metal detector.

STRESS

Stress is estimated to play a role in up to 30 percent of infertility problems. Men reporting higher levels of stress are less fertile, and research documents depressed testosterone levels and lowered sperm counts.¹³ The body uses up vitamin A to produce stress hormones and may have little left over for the production of sex hormones. Stress causes physiological responses, affecting the heart rate, blood pressure, blood sugar levels, digestion, the immune system and reproduction. The breaking point is very individual, so it is wise to watch for signs and symptoms that indicate stress is taking a toll on your health. These include headaches, indigestion, abdominal pain, insomnia, anxiety, depression, poor memory, cloudy thinking, criticizing others, moodiness, addictive behaviors and decreased interest in sex.

It is critically important to find a way to lower and manage stress. Change the situation, reprioritize, do less, or simply change your attitude. Take time for quiet and relaxation, and do something that brings pleasure. Some people benefit from learning specific relaxation techniques, practicing yoga, tai chi or qi gong. Remembering to take time to acknowledge that you are a spiritual being may be the key for some. Also consider meditation, imagery, affirmations, prayer and counseling. Most importantly, remember that your nutritional requirements increase during periods of stress, so a focus on nutrient-dense foods is paramount.

Do whatever it takes to lower your feeling of stress. Stress is not good for health, and particularly not good for fertility. The body does not distinguish between physical or psychological stress. Too much stress is a clear signal to the body that making a baby is a really bad idea.

EVALUATE YOUR DIET

How do you know whether you are getting the nutrients you need to have vibrant health and be fertile? Start by eating a variety of nutrient-dense foods. Occasionally put your food for the day into an online nutrient tracker to see how you are doing. This information can be used to fine-tune your diet. Look at the balance of fats, carbohydrates and protein. Review the nutrient intake report and see whether you are getting adequate amounts of each vitamin and mineral. Then compare your results with the guidelines provided in this article. Seeing a shortfall can guide and motivate you to make changes for the better. Recommended websites for tracking nutrients are supertracker.usda.gov/ and nutritiondata.self.com/

A NOTE OF CAUTION

The information in this article is not necessarily in alignment with the current USDA Dietary Guidelines. However, these nutrient trackers are. The recommended amounts of fats (and types of fats), carbohydrates, proteins and salt differ. Saturated fat is still considered to have no nutritional value. Also, these trackers assume a 5 percent conversion of beta-carotene to vitamin A when calculating vitamin A nutrient intake. As discussed above, it is possible that an individual does not convert any at all. Keep this in mind when using one of these nutrient evaluation tools.

OTHER FACTORS

There are a few more important factors to consider that can affect fertility.

Keep your testicles cool. Testicles hang outside the body for a reason. Sperm are damaged by higher temperatures. For healthy sperm men should avoid all of the following: hot tubs, saunas, long baths, tight shorts or underwear, using a laptop computer on the lap, keeping a cell phone in the pocket, and sitting or cycling for long periods of time.


Maintain a healthy weight. Both overweight and underweight can affect fertility. Exercise appropriately. Exercising excessively and being in poor physical condition are both associated with decreased fertility.

Sleep is a cornerstone of good health. Research shows that seven to ten hours per night are needed. Two things that help optimize your sleep sanctuary are to avoid artificial lights and electronics. Waking up feeling rested and rejuvenated is normal. If this is not your experience, something needs to be done about it.

Sunlight is very important for vibrant health and fertility. Sunlight on the skin is necessary for the body to make vitamin D. It helps to regulate the inner circadian clock, which plays a crucial role in almost every physiological process, including reproduction.¹⁴ Getting to sleep by ten to eleven o'clock in the evening helps the body stay in sync with this rhythm. Sunlight helps provide energy for the circulatory system, which is important for all aspects of health. Stay in the sun until the skin turns the lightest shade of pink. Do not sunburn, as it is damaging to the skin, but develop a tan gradually.

SUMMARY

The goal of this information is to help you have a happy, healthy baby in your arms. If you and your partner are having trouble conceiving, or if you have abnormal sperm or hormone imbalances, this information has the potential to solve these problems. Begin with an honest self-evaluation of your current level of health and commitment to a healthy lifestyle. Is there room for improvement? Are you under the age of forty? If both are true, begin applying this information immediately, and give it some time to see benefits.

If you are forty or older, have significant medical issues, or if you live an exemplary life and still have no baby, then you likely need more help. Definitely eat well, make healthy lifestyle choices, and begin to build your team. This may include your primary care doctor, a fertility expert, a holistic physician, and other practitioners of your choice who can help you obtain vibrant health and fertility. Start today. 

Veronica Tilden, DO, has been practicing medicine since 1997. You can find her at DrVeronicaTilden.com. She has a private practice in California where she treats patients of all ages and with all medical problems. Dr. Tilden helps her patients achieve vibrant health using osteopathic manipulative medicine, nutrition, whole food supplements, herbs and lifestyle counseling. Her passion for good nutrition began as a teenager, she has been a WAPF member for years, and she speaks at Wise Traditions conferences. Because of the heartbreak and increasing incidence of infertility and the lack of help for couples through the medical system, Dr. Tilden founded an online company to help provide critically important and simple information to have vibrant health and fertility. You will find this at MyPregnancyExpert.com.

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The Problem with Protein Powders

By Sally Fallon Morell

Pick up any bodybuilding magazine and you will find pages of ads for protein powders; or visit any health food store and note the containers of these powders. Typically such establishments feature a whole aisle of protein powders of various types—soy, hemp, whey and some newcomers like pea and rice protein.

These powders are promoted on the premise that bodybuilders, serious athletes, fitness enthusiasts and even ordinary people need more protein than they can get from an ordinary diet. If you surf the Internet, you will read on countless websites that these powders can confer health benefits on everyone and pose no dangers whatsoever. Sometimes you get a hint that they may cause indigestion and gas, or that overuse may leave you with kidney stones and gout. But overall, numerous fitness gurus promote them shamelessly as a way to build optimal endurance, build muscle mass and achieve good health.

Vitamin A is not only depleted by a high intake of protein, but it is also necessary for the synthesis of new protein, which is the goal of the bodybuilder.

Adequate protein is important for everyone, but especially for those who exercise rigorously. Protein is used for building and repairing muscles and tissues, red blood cells, hair and fingernails and for synthesizing hormones. Protein is necessary for reducing the risk of iron deficiency anemia and to support healing.

The question is, should athletes and others imbibe these protein products in beverages, shakes and bars? Perhaps the habits of traditional healthy peoples can give us a clue.

Healthy traditional peoples—so-called Paleolithic cultures—lived off the animals of land and sea. They preferred the organ meats and fat of these animals, always avoiding lean meat. For the Australian aboriginal, a lean kangaroo or a fish captured during the season when it was low in fat—was considered rubbish, and quickly discarded.¹ The explorer Vilhjalmur Stefansson, who lived among the Inuit and Indians of Canada, noted that the Indians assiduously avoided lean meat: “The groups that depend on the blubber animals are the most fortunate, in the hunting way of life, for they never suffer from fat-hunger,” he wrote.

“This trouble is worst, so far as North America is concerned, among those forest Indians who depend at times on rabbits, the leanest animal in the North, and who develop the extreme fat-hunger known as rabbit-starvation. Rabbit eaters, if they have no fat from another source—beaver, moose, fish—will develop diarrhoea in about a week, with headache, lassitude and vague discomfort. If there are enough rabbits, the people eat till their stomachs are distended; but no matter how much they eat they feel unsatisfied. Some think a man will die sooner if he eats continually of fat-free meat than if he eats nothing, but this is a belief on which sufficient evidence for a decision has not been gathered in the North. Deaths from rabbit-starvation, or from the eating of other skinny meat, are rare; for everyone understands the principle, and any possible preventive steps are naturally taken.”²

Remember that Dr. Price described these people as well-muscled and hardy—splendid specimens all, exactly what the modern athlete is trying to achieve. They knew that a lean-meat diet would make them very sick, and eventually

lead to death. What is the scientific explanation for this danger?

PROTEIN AND VITAMIN A

We need look no further than Chris Masterjohn’s article, “Vitamin A, The Forgotten Bodybuilding Nutrient” (*Wise Traditions*, Fall 2004). As Masterjohn explains, “The utilization of protein requires vitamin A. Several animal studies have shown that liver reserves of vitamin A are depleted by a high dietary intake of protein, while vitamin A increases in non-liver tissues. One explanation for this is that adequate protein is necessary for vitamin A transport. In one study, researchers fed radioactively-labeled vitamin A to rats on low-protein and high-protein diets, using the amount of radioactivity present in exhaled gases, urine and feces as a measure of the metabolism of vitamin A, and found that vitamin A is indeed used at a higher rate on a high-protein diet.”

Masterjohn continues, “Vitamin A is not only depleted by a high intake of protein, but it is also necessary for the synthesis of new protein, which is the goal of the bodybuilder. Rats fed diets deficient in vitamin A synthesize protein at a lower rate than rats fed adequate vitamin A. Cultured skeletal muscle cells increase the amount of protein per cell when exposed to vitamin A and D, but not when exposed to vitamin D alone.”

In other words, eating lean meat or taking a protein powder sends a signal to the liver: “Send me vitamin A!” Protein consumed in the absence of fat, with its precious cargo of fat-soluble vitamins, including vitamin A, is an effective way of rapidly depleting your liver of vitamin A stores.

What happens when the liver becomes depleted of vitamin A, so that none can be made available to the body when needed?

Vitamin A is key to almost every process in the body—the concert master, so to speak—not only for protein synthesis, but also for hormone production (including sex hormones like testosterone, and thyroid hormone); vitamin A is also key to immune system function, critical for healthy vision and hearing, plays a role in bone health, and works in tandem with vitamins D and K₂ for everything from the prevention

of heart disease to the production of feel-good chemicals. A diet of lean meat, or one that incorporates protein powders, is a recipe for hormone disruption, fatigue, depression, bone problems, auto-immune disease, vision and hearing problems, heart disease and even cancer.

MORE PROBLEMS

In addition to flooding the body with protein, protein powders present other dangers. Soy protein is the most problematic, but all protein powders contain ingredients that do a body harm. The manufacture of soy protein isolate (SPI) is a complicated, high-tech procedure that takes place in chemical factories, not kitchens. The basic process begins with defatted soybean meal, which is boiled with a caustic alkaline solution to remove the fiber, then washed in an acid solution to precipitate out the protein. The protein curds are then dipped into yet another alkaline solution and finally spray-dried at extremely high temperatures.

The resulting proteins are invariably denatured, although some of the very tough proteins, like protease inhibitors, survive the rough processing treatment. These actually inhibit protein digestion—which may inhibit the digestion of some of the good proteins you are eating. These hardy molecules have been associated with digestive problems, pancreatitis and even pancreatic cancer.

SPI is mixed with nearly every food product sold in today's stores—not only powders but energy bars, breakfast shakes, hamburgers and hot dogs—not to mention soy infant formulas. Consisting of 90 to 92 percent protein, the processing does remove some of the bitter, beany flavors of soy, and reduces the levels of complex sugars that cause flatulence. But studies have shown that soy isolates increase the body's requirements for vitamins E, K, D and B₁₂. Among the minerals, phosphorous is poorly utilized, and calcium, magnesium, manganese, molybdenum, copper, iron and especially zinc deficiencies appear in animals fed SPI as the primary source of protein in their diets. Soy protein isolates are also more deficient in sulfur-containing amino acids than other soy protein products. What's increased during the production of SPI are levels of toxins and carcinogens such as lysinoalanines and nitrosamines.

Soy is unique among legumes in containing very high levels of isoflavones—these are plant-based estrogens—and they would be concentrated in soy protein isolate. These can block testosterone in men, causing infertility and even breast development. The isoflavones are also responsible for the thyroid-depressing effects of soy products, not just in highly artificial products like soy protein isolate, but also in more traditional ones like tofu.

Most athletes have learned that soy is not their friend; indeed soy products have definitely lost their luster. The prominent displays of soy milk and soy protein have disappeared from the grocery and health food stores, replaced by things like almond milk and hemp protein powder.

However, any plant protein powder will go through a similar manufacturing process—separation from the fiber by boiling in caustic alkaline solutions and then spray-drying at very high temperatures, leaving the proteins denatured and possibly toxic.

Hemp protein may not carry a load of isoflavones, but it does contain cannabinaoids, the same substance found in its cousin marijuana. Not at the same levels, of course; hemp protein manufacturers are quick to

OTHER PROTEIN POWDERS

RICE PROTEIN is the latest darling in the health food world. Advertised as non-allergenic, easily digested and “completely vegan,” most brands of rice protein are still made using caustic chemicals and high heat, although some are advertised as produced using a “raw food” enzymatic technique. However, even those touting natural processing admit that the resulting powder tastes bitter, even “repulsive,” so it needs to be hidden with other ingredients, namely sweeteners. Like all plant protein powders, it provides only incomplete protein, so it requires supplementation with some kind of legume. Just eating meat is a better alternative.

EGG WHITE POWDER is spray dried at very high temperatures and is likely to be highly allergenic.

CRANBERRY PROTEIN: Really? Made with the skin of cranberries pressed for juice—another waste product! Advertised as rich in antioxidants and omega-3 fatty acids, cranberry protein is unlikely to contain good quality protein. Plus, it will need lots of sweeteners to disguise its bitter flavor.

ARTICHOKE PROTEIN: What will they think of next? Advertised as rich in inulin, a very difficult-to-digest carbohydrate made of fructose molecules, it's bound to cause flatulence and mess up your liver for good measure.

BONE BROTH PROTEIN: Likely to be a major source of glyphosate (see page 34) unless made with organic, pasture-fed products. Best to make your own broth with the bones of grass-fed animals.

But just in case there is any life in the whey proteins after pasteurization and the filtration process, the resulting liquid is forced out a nozzle at 250 degrees C to produce a powder.

point out that the amount of cannabinoids in hemp is only about 5 percent that of marijuana. But how much hemp powder are people imbibing? And are these problematic alkaloids more concentrated in a protein powder?

Pea protein is the latest legume powder on the market. One manufacturer describes pea protein isolate as “made from high quality non-GMO peas, by the processes of isolation, homogenization, flash evaporation, sterilization and spray-drying.” That sounds like three applications of high temperature! Peas may be much lower in isoflavones than soybeans, but they still contain many problematic compounds, such as phytic acid and difficult-to-digest oligosaccharides. These can be neutralized by proper soaking and traditional long cooking—but that is not how pea protein isolate is made.

WHEY TO GO?

Soy protein is derived from the waste product of the soybean oil industry—it’s the industry’s way of making a profit out of the high-protein sludge left over after soybean oil production. Whey is the waste product of the cheese industry. In the past, before Big Ag came along with its insane idea of separating all the species on the farm and raising them in single-species facilities, the whey from cheese making was fed to the pigs on the same or neighboring farms. This is the system still in use in Italy—the whey from the production of Parmesan cheese goes to the pigs on nearby farms to produce delicious prosciutto ham. This is hard to do when all the pigs are in South Carolina and all the dairy cows are in Wisconsin or Texas.

The problem with whey is that it eats up concrete, so you can’t put it in the sewers. But not to worry; the industry has figured out how to turn this delicate substance into a powder. In a complicated process, the liquid whey—separated from pasteurized milk that goes into most cheese manufacture—is put under pressure and forced through a membrane to separate out the proteins from the smaller molecules—this happens at least twice as micro-filtration and then ultra-filtration. The pressures used vary from 30 to 100 psi. Does this process damage the whey proteins? According to one Internet source, this pressure, although not considered excessive, is

enough to change the hydrogen-bonded structure of water and therefore would also disrupt the protein structure.³ But just in case there is any life in the whey proteins after pasteurization and the filtration process, the resulting liquid is forced out a nozzle at 250 degrees C to produce a powder. The certain result is denaturation of the proteins and oxidation of the tiny particles.

Raw liquid whey is a wonderful source of glutathione, the body’s master detoxifier. But glutathione does not work after it has been heated. Whey can also be powdered through a freeze-drying process, but that is an expensive procedure, and few brands of whey powder on the market today are processed in this way. In any event, the whey has already come from pasteurized milk, and pasteurization temperatures alone are enough to denature the delicate glutathione.

PROTEIN REQUIREMENTS

The question remains: do those who undergo vigorous training, or even ordinary sedentary people, need extra protein; is it difficult to satisfy our protein requirements with a modern Western diet?

Protein requirements vary with age, gender, weight and the level of physical activity. In round numbers, protein requirements for men vary from about 50 to 100 grams per day; for women from about 50 to 75 grams per day. A man of one hundred eighty pounds engaged in vigorous physical training may need as much as 160 grams per day.

A good way to gauge our protein intake is to think of protein foods as providing blocks of about 25 grams of protein. In round numbers, the following foods provide about 25 grams of protein:

- 1 serving of meat, liver, poultry or fish (about 100 grams or 3.5 ounces)
- 1 serving of cheese (about 80 grams or 3 ounces)
- 4 eggs
- 3 cups milk

A woman’s protein requirements are met with two to three such units. Thus one serving of meat, one serving of cheese, two eggs and one pint of milk will provide about 75 grams of protein.

A man's protein requirements call for up to four such units. Thus two servings of meat, one serving of cheese, four eggs or three cups milk will provide about 100 grams of protein.

What about the bodybuilder or triathlon runner who requires up to 160 grams of protein per day? If he eats meat three meals per day, plus one serving of cheese, four eggs and a quart of milk (raw milk of course), his protein requirements are more than satisfied. This may seem like a lot of food to the ordinary person, but then athletes do consume a lot of food. And this is real food, food that the body knows how to digest, food that comes with its full complement of vitamins, minerals and cofactors.

With all this protein, athletes need to pay careful attention to getting enough vitamin A to assimilate that protein. As Masterjohn warns: "Bodybuilders and other athletes interested in gaining muscle have an interest in boosting their levels of testosterone and other growth factors and maximizing their utilization of protein and its incorporation into muscle cells. Typical recommendations usually include very high amounts of protein, but exclude foods like liver that are high in vitamin A, and lowfat recommendations all but banish vitamin A entirely from the diet by excluding foods such as full-fat milk. The combination of a high-protein diet that depletes vitamin A and a lowfat diet that fails to provide vitamin A is a clear recipe for

deficiency of this vital nutrient. Exercises that elicit a high demand for testosterone, such as squats and deadlifts, are often recommended for muscle growth, but without vitamin A the body cannot meet that demand for testosterone. It's high time for athletes to forget the modern mantras and remember the dietary wisdom of the past, achieving a lean, muscular physique through traditional foods such as liver, egg yolks, full-fat milk, butter from grass-fed cows and cod liver oil."⁷⁴

By the way, studies have shown that excess protein does *not* build muscle bulk. What builds muscle bulk in healthy athletes is strength exercise. As one blogger put it: "Tom wants to make his upper body bigger and increase his upper body strength (to impress the women, of course). He goes to the local health food store where he is told to increase his protein intake by eating protein shakes at each meal. He then goes to his sports med doctor and sports dietitian who tell him to eat a moderate amount of protein and swim three times a week plus do upper body weights three times a week. Which do you think will work?"⁷⁵

And remember, guys, your athletic career will not last forever. When you retire, you will want to be healthy enough to enjoy your winnings, father healthy children and live well into old age. That's guaranteed only with a diet based on real food, including organ meats and fat. ☺☺

Sally Fallon Morell is the author of the best-selling cookbook Nourishing Traditions and founding president of the Weston A. Price Foundation. Visit her blog at nourishingtraditions.com.

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OTHER INGREDIENTS

Very few protein powders come without a number of added ingredients. These include:

SWEETENERS: Sweeteners are needed because these powders tend to be very bitter. Caloric sweeteners include both sugar and high fructose corn syrup. The most common artificial sweetener is sucralose. Acesulfame potassium, considered by some to be the most dangerous sweetener out there, shows up on many of the labels. Then there is maltodextrin, a sweetener made from corn.

AMINO ACIDS: The most common is L-glutamine, probably neurotoxic and very bad news for those allergic to free glutamates. Many products contain a whole host of free amino acids, compounds that can have drug-like effects and should only be used under the direction of a qualified practitioner.

VEGETABLE OILS including sunflower oil and soybean oil. One label claims (illegally) that soybean oil will protect against heart disease!

ADDITIVES including natural and artificial flavorings, food dyes, carageenan, cellulose gum, xanthan gum, and mono- and di-glycerides.

COOKIE PIECES: No kidding, one product contains "cookie pieces."

COCOA/CHOCOLATE: Workout buffs seem to love their chocolate—it's added to so many of these products.

Glyphosate in Collagen: Widespread Consequences

By Stephanie Seneff, PhD

Last year, I received a phone call from Anthony Samsel who wanted to share with me an important new insight on a potentially new toxic mechanism of glyphosate. Anthony and I had already collaborated on four long papers on glyphosate, each one adding new dimensions to the knowledge of toxic mechanisms of this diabolical molecule. But what Anthony was about to share with me about glyphosate was a game-changer, if it turned out to be true. It could easily explain the alarming correlations we were finding between the exponential rise in the use of glyphosate as an herbicide on core crops and the corresponding rise in the incidence of a long list of debilitating diseases and conditions. Nancy Swanson was the first to recognize these strong correlations, which she compiled together with colleagues into an open access paper published in 2014.¹

Glyphosate is the active ingredient in the pervasive herbicide Roundup®. You are probably familiar with Roundup as a convenient way to control dandelions in your yard and weeds growing in the cracks of your walkways. Monsanto, Roundup's manufacturer, convinced the U.S. regulatory agencies over four decades ago that glyphosate, despite the fact that it kills all plants except those core crops that have been genetically engineered to resist it, is practically nontoxic to humans.

Because of its perceived nontoxicity, the government has put very little effort into testing residue levels in the foods that we put on our table. The crops that are engineered to resist glyphosate are highly contaminated, because they take up the glyphosate and incorporate it into their own tissues. These include corn, soy, canola, alfalfa and sugar beets. As well, many grains, legumes and other crops are sprayed with glyphosate right before harvest as a desiccant or ripener. These include sugar cane, wheat, barley and oats, among others.

So, what was it that Anthony shared with me when he called me that day? He suggested that glyphosate might be getting into proteins by mistake in place of glycine. To understand the significance of this statement, you need to know a little bit about proteins and protein synthesis.

Proteins are one of the three major macronutrient classes in foods, the other two being carbohydrates and fats. Proteins are also the “work horses” of the body. All of the enzymes, receptors, ion channels and transporters are proteins. Hemoglobin, insulin, serum albumin and immunoglobulins (antibodies) are all proteins.

EVIDENCE OF GLYCINE SUBSTITUTION BY GLYPHOSATE

Glyphosate is a complete glycine molecule except that a hydrogen that normally attaches to the nitrogen atom has been displaced by a methyl phosphonyl group. Glyphosate’s ability to disrupt pathways where glycine is normally involved is believed to be part of its toxicity profile, acting as a glycine analogue.² The thought had crossed my mind that glyphosate might substitute for glycine during protein synthesis, but I had rejected the idea because I mistakenly

believed that the presence of a side chain on the nitrogen atom would prevent glyphosate from joining hands in the paper-doll-like chain.

However, after Anthony insisted that it could happen, I looked into the matter more deeply, and that was when I realized that the coding amino acid proline also has a carbon substitution for the hydrogen atom normally attached to the nitrogen atom, but has no trouble linking up with the other amino acids. That’s when I got really interested in the idea and started to get serious about exploring the consequences.

What I quickly found out is that protein synthesis is a sloppy process. Lots of mistakes are made, and the approach a cell takes is to take a chance on the mistakes being relatively benign, and then only disassemble and reassemble those proteins that turn out to be flawed in a major way. Probably it is easier to detect protein functional failure or major misfolding than it is to detect and then undo every single mistake during the assembly process, and so this sloppy approach to manufacturing has survived the test of time.

A study on glyphosate’s effects on protein expression in microbes living in the rhizosphere (the soil surrounding the roots of plants) showed that both proteins involved in protein assembly and those involved in protein disassembly were significantly over-expressed in the presence of glyphosate.³ This strongly suggests that glyphosate was causing a lot more errors during protein synthesis than normal.

Monsanto claims that the main toxic effect of glyphosate on plants is disruption of an important biological pathway called the shikimate pathway. Specifically, glyphosate suppresses

Glyphosate’s ability to disrupt pathways where glycine is normally involved is believed to be part of its toxicity profile, acting as a glycine analogue.

PROTEINS AND THE DNA CODE

Proteins are the set of molecules that are specified through the DNA code, and they are made up of sequences of so-called coding amino acids, the building blocks of proteins. There are four DNA nucleotides that are arranged as beads on a string and that can be represented symbolically by the four letters, A, G, C and T. Each sequence of three of these letters codes for a specific amino acid.

There are sixty-four possible unique codes, but only around twenty coding amino acids, so the code is redundant. The amino acids also assemble like beads on a string, or more like paper dolls holding hands through chemical bonds between a nitrogen atom in one amino acid and a carbon atom in the next one in the chain. Any sequence that contains two guanines (GG) followed by any one of the four nucleotides (thus, GGA, GGG, GGC, and GGT), codes for glycine, the smallest amino acid, uniquely free of any side chains.

Glyphosate substitution for glycine in a protein can totally disturb the shape of the molecule.

activity of an enzyme called 5-enolpyruvylshikimic-3-phosphate synthase (EPSPS). Remarkably, three different microbial species have developed resistance to glyphosate by swapping out a glycine residue at the site where the substrate phosphoenol pyruvate (PEP) is secured in place.^{4,5} All three microbes have replaced this glycine residue with alanine (adding one extra methyl group). This results in a reduction in the efficiency of the protein, but, most remarkably, completely protects it from any suppression by glyphosate. One of these mutated microbial proteins is the basis of the genetic engineering that is done to afford resistance to glyphosate to all of the GMO Roundup Ready plants.⁶

Figure 1 shows the molecular structure of four amino acids—glycine, glyphosate, proline and alanine. It can be seen from the figure that both proline and glyphosate have something displacing the hydrogen atom that normally binds to the core nitrogen atom. Nonetheless,

this does not prevent them from hooking up in the amino acid chain constituting a protein. Figure 2 schematizes how glyphosate substitution for glycine at the active site can cause extra material to bulge out into the pocket where the substrate normally fits snugly. This extra material interferes with the substrate and prevents it from entering the site, thus totally disrupting the enzyme's function.

Glyphosate is not the only non-coding amino acid that causes trouble by substituting for coding amino acids during protein synthesis. There are at least nine examples of non-coding amino acids that are naturally produced by certain organisms, mostly microbes, and are thought to be utilized as a defense mechanism against pathogens.⁷ These unusual amino acids are analogues of the coding amino acids, including glutamic acid, leucine, L-arginine, serine, and proline. Note that glyphosate, however, is never synthesized by any life form—it is only

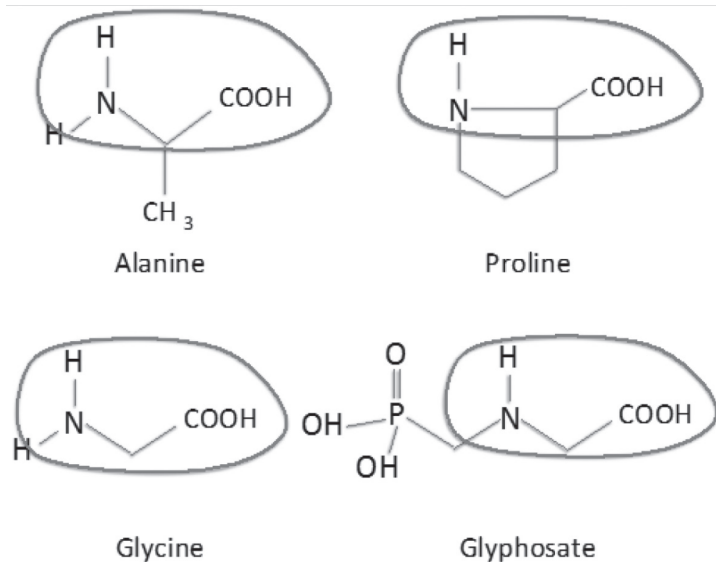


FIGURE 1: Four examples of amino acids. Glycine, the simplest amino acid, has no side chains. Alanine is the second simplest amino acid, which has a simple side chain consisting of a methyl group (CH₃). Glyphosate is a glycine molecule with the side chain on the nitrogen atom instead of the traditional form with a side chain on the carbon atom. Proline is a unique amino acid with the side chain circling around so that it becomes attached to both the central carbon and the nitrogen molecule. The circles indicate the core structure of the molecule, which defines its membership in the “amino acid” class of molecules. Note that both glyphosate and proline have lost one hydrogen bound to the nitrogen atom, but this does not prevent them from linking up in the amino acid chain that makes up a peptide in a protein.

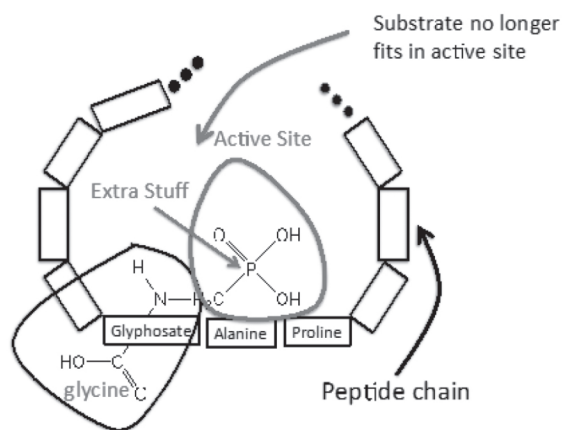


FIGURE 2: Schematic of how glyphosate substitution for glycine in a protein can totally disturb the shape of the pocket where the substrate for the enzymatic action would normally fit snugly.

a creation of the chemistry lab.

Some of the diseases linked to these other toxins include amyotrophic lateral sclerosis (ALS), Parkinson's disease, multiple sclerosis, and metabolic failure leading to death by starvation.⁸ The book *Into The Wild* describes the experiences of Chris McCandless who tried to live off of nature in the wilds of Alaska, and met his death due to chronic poisoning by an analogue of L-arginine, which he ingested by eating seeds from a plant commonly called wild potato, known to botanists as *Hedysarum alpinum*. Jon Krakauer, the author of the book, later collaborated with scientific experts to write a paper about this.⁹

CONSEQUENCES OF GLYPHOSATE SUBSTITUTION TO HEALTH

Not every protein that gets a glyphosate substituted for glycine in its peptide chain is totally wrecked by this error. Probably in many cases it hardly matters that there's extra stuff stuck onto the nitrogen in the glycine residue. However, it turns out that there are hundreds if not thousands of proteins that strongly depend on glycine at certain spots in their chain in order to perform their job adequately. These are typically highly conserved, meaning that a glycine residue is always present in that spot in multiple variants of a particular protein that is expressed by many different species, even across different phyla in some cases. Researchers use alignment techniques to discover which residues are highly conserved across species in order to find residues that probably play an important role in the protein's function.

A good example is myosin—a molecular motor in muscle cells that is responsible for muscle contraction and therefore movement. Myosin's protein code specifies glycine at position 699 in the chain. If this glycine residue is replaced by alanine, myosin drops to only 1 percent of its original strength. In fact, if only one out of every fifty myosin molecules in a muscle fiber has glycine swapped out for alanine, the muscle loses half its strength, even though alanine has just one extra methyl group compared to glycine.

Substituting glyphosate for glycine 699 would be an even bigger deal. I strongly suspect

that substitution of glyphosate for glycine in myosin and other molecular motors is a causative factor in chronic fatigue syndrome and ALS. In fact, we proposed this in a recent paper.⁸ In an earlier paper, the result of my phone conversation with Anthony Samsel, we showed systematically how various specific proteins would be adversely affected by glyphosate substitution, and how these could account for the steep rise that we are currently seeing in a number of diseases and conditions such as diabetes, obesity, autism, celiac disease, Alzheimer's disease and cancer.¹⁰

Two things to consider when thinking of proteins that might be most affected by this substitution error are the expression rate of the protein and the percentage of the protein that constitutes glycine residues. When you take these factors into consideration, one molecule stands out: collagen. Collagen is the most abundant protein in the body—one in every four protein molecules in our body is collagen. Collagen is what gives our joints, bones and skin strength and elasticity.

Collagen is loaded with glycine. Twenty to 25 percent of the residues in collagen are glycines. Collagen forms a triple helix (see Figure 3) in long segments of the molecule through a repeat pattern of GXX, where G stands for glycine and X is usually either proline or hydroxyproline. If you start randomly inserting glyphosate in place of glycines in this triple helix, you will disturb the crystalline structure and wreck the collagen properties of elasticity, strength and the ability to retain water. This will almost certainly result in joint pain, a major contributor to the opioid epidemic we're currently witnessing in the U.S.¹¹ Rheumatoid arthritis, osteoporosis and various skin disorders can all be anticipated.

Once you think of glyphosate insinuating itself into collagen, it's an easy step to imagine that glyphosate would be a major contaminant in gelatin, a very common food additive and the main constituent of gelatin-based desserts. Gelatin is routinely added to marshmallows, pudding, gummy bears, yogurts, margarine, frosting, cream cheese, sour cream, non-dairy creamers and fat-reduced foods.

Gelatin is typically derived from the bones,

There are hundreds if not thousands of proteins that strongly depend on glycine at certain spots in their chain in order to adequately perform their job.

Bone broth, a highly nutritious food, must be made from grass-fed beef rather than from the large confined animal feeding operations (CAFOs).

joints and skin of pigs and cows. These animals are fed high doses of glyphosate in their GMO Roundup Ready corn and soy feed. The glyphosate that makes its way into their joints ends up in your gelatin dessert.

Gelatin is also the main constituent of gel caps, which have become a standard way of packaging both pharmaceutical drugs and nutritional supplements such as fish oil. I would predict that any nutritional supplement housed in a gel capsule is going to cause you much more harm than good, because whatever benefit the contents provides is more than offset by the damaging effects of the glyphosate. This also means, of course, that bone broth, a highly nutritious food, must be made from grass-fed beef rather than from the large confined animal feeding operations (CAFOs). One solution is to be sure that your supplements use vegan gel caps, which are made from cellulose, a plant-derived polysaccharide that would probably be much less at risk of glyphosate contamination.

GLYPHOSATE, MMR AND AUTISM

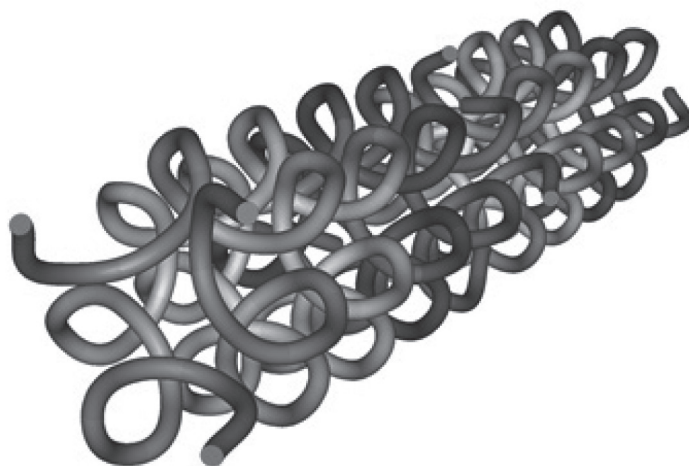
The most serious consequence of glyphosate in collagen is likely to be glyphosate contamination in vaccines. Gelatin is an additive in many vaccines, and the measles, mumps and rubella (MMR) vaccine contains an especially high level of gelatin compared to other vaccines. Both Anthony Samsel and Zen Honeycutt of Moms Across America have tested various vaccines for glyphosate. Many of them tested

positive, but MMR stood out as having more glyphosate by an order of magnitude than any of the others. The live measles virus is grown on gelatin, and this provides the virus with the opportunity to incorporate glyphosate into its own proteins.

In particular, the measles virus produces a protein called haemagglutinin, and this is the protein that the human immune system is supposed to react to, producing specific antibodies, in order for the vaccine to “take.” Professor Singh of Utah State University has been studying autism since the early 1990s, and, in a series of papers, his team has shown that autistic children tend to produce an extremely high antibody response to measles haemagglutinin. Nearly all of those autistic children who have a high antibody response also have autoantibodies to myelin basic protein, an important protein in the myelin sheath surrounding nerve fibers in the brain.¹² The autoantibodies are a result of a phenomenon called “molecular mimicry,” whereby a foreign protein happens to have a peptide sequence that closely resembles a peptide sequence in a native protein. The immune cells get confused and mistake the native protein as foreign due to its resemblance to the foreign protein (in this case, haemagglutinin). The result is an autoimmune attack on the nerve fibers in the brain.

The FDA maintains a database called the Vaccine Adverse Event Reporting System (VAERS), and this database contains hundreds

FIGURE 3: Collagen triple helix structure



of thousands of reports of adverse reactions to vaccines since 1990. In a study that was conducted before I even knew the word glyphosate, my colleagues and I had reported the surprising result that events where MMR was one of the vaccines were highly over-represented with mentions of “autism” ($p = 0.007$).¹³ At the time, we struggled to explain this observation, since MMR contains neither mercury nor aluminum, two toxic metals that have been implicated in autism, and we hypothesized that it might be due to acetaminophen prescribed to curb the fever from the vaccine.

Once I realized that MMR might be contaminated with glyphosate, it made sense that the MMR vaccine administered today might be much more toxic than the vaccine was in the early years when glyphosate usage on core crops was more modest. To test this hypothesis, I divided up the VAERS database into two subsets spanning equal time spans—events before 2003 and events after 2002, that is, early versus late. As expected, we found that there were significantly more instances of severe adverse reactions after 2002, including anaphylactic shock, hospitalization, seizures and autism, as shown in Table 1.

SUMMARY

Glyphosate is the active ingredient in the herbicide Roundup, which is pervasive in our food supply. My recent research, inspired by Anthony Samsel’s conjecture, leads me to strongly suspect that glyphosate is getting into proteins by mistake in place of glycine. This has huge consequences to our health, because the human proteins contaminated with glyphosate don’t work properly in their function in the body, and the glyphosate-contaminated food proteins tend to resist proteolysis, sticking around and causing autoimmune disease through molecular mimicry. This feature easily explains the epidemic we’re seeing in allergies to foods that are likely to contain high amounts of glyphosate contamination, such as gluten, casein and soy.

One molecule we can predict to be severely affected by glyphosate substitution for glycine is collagen, the most abundant protein in the body. Collagen is essential for cushioning the joints, and, when it is defective due to glyphosate contamination, it performs poorly in its job, leading to joint pain and tendonitis, among other things. This can explain why so many people today suffer from chronic pain conditions such as shoulder pain and back pain, and why we have an epidemic in opioid drug abuse. Foods that contain high amounts of gelatin can be expected to be highly contaminated with glyphosate, and this includes bone broth, which would ordinarily be very nutritious. One also has to consider the implications of glyphosate contamination in gel capsules.

Probably the most ominous consequence of glyphosate contamination in collagen is the implications it has for vaccines. Vaccines are injected directly into the body past all the normal barriers, and this makes any toxic ingredient in the vaccine very problematic. MMR vaccine in particular was found to have much higher levels of glyphosate than other

Table 1: Statistical analysis of frequency of various adverse reactions to MMR before and after January 2003. The p-values are computed according to a chi-square goodness of fit test.

MORE COMMON BEFORE 2003			
Reaction	Count <2003	Count ≥ 2003	p-value
arthritis	52	18	0.045
joint pain	175	75	0.012
MORE COMMON AFTER 2002			
Reaction	Count <2003	Count ≥ 2003	p-value
hospitalization	132	423	0.00041
seizures	314	534	0.0055
dyspnea	139	279	0.0086
hives	444	654	0.011
anaphylactic shock	28	91	0.017
eczema	10	47	0.028
autism	105	184	0.031
hyperventilation	18	57	0.035
general infection	77	136	0.044
asthma	22	58	0.046
immunoglobulin G	0	17	0.048
ear infection	32	72	0.048
heart rate irregular	11	39	0.049

vaccines, and this may well explain the association between MMR and autism that shows up in the VAERS database. This can also explain why adverse reactions to MMR are much more severe today than they were in the 1990s when much less glyphosate was used on core crops.

You can help reduce glyphosate exposure for your family by switching to a 100 percent certified organic diet. More generally, there is an urgent need for government action to ban glyphosate in order to protect our population from harm. ☯☯

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Popular speaker Stephanie Seneff, PhD, and husband Vincent Zue, PhD, celebrate their fortieth wedding anniversary at Wise Traditions 2016.



Indispensable conference staff Mike Mudrak (back row) with wife Judith and George and Maureen Diaz make sure everything goes smoothly, from the back rooms to the food service.

Iran's Traditional Foods: A Heritage Worth Renewing

By Soroush Niknamian

Mention Persia (modern-day Iran) in everyday conversation, and you will likely evoke immediate images of Persia's rich cultural heritage—ornate woven carpets or the elegant poetry of Rumi, for example. However, Iran also deserves to be known and celebrated for its rich and varied traditional cuisine.

In the past, traditionally prepared items that featured raw milk and bone broth were commonplace in the animal-fat-rich Iranian diet. These included *Lighvan*, a semihard cheese made from raw sheep's milk (or a combination of raw sheep's and goat's milk), and *Ab-goosht*, a peasant stew that translates literally as “meat water” because it relies on the core ingredients of lamb shanks and neck bones to create a broth abundant in minerals, gelatin and collagen. Nowadays, unfortunately, the Iranian diet is much more likely to highlight cheap (in the short term) food industry standards such as vegetable oils, margarine, soy and sodas. Iran also has succumbed to Western fears about animal fats. As a result of this ongoing “nutrition transition,” diet-related chronic diseases are on the rise and are a leading cause of mortality.¹

Avicenna observed that milk should come only from “animals that have been fed from the most nutritious plants in a wide area” and also noted that “boiling the milk will make it rancid for the temperament of human beings.”

From the 800s AD onward, Persia was internationally admired for its scientific and cultural leadership. The influential eleventh-century Persian philosopher and scientist Avicenna (980–1037 AD), author of *The Book of Healing* and the five-volume *Canon of Medicine*, recognized the relationship between sound dietary practices and good health. Avicenna’s seminal works lauded the virtues of nutrient-dense animal foods, including yogurt cultured from raw milk, bone broth, and meats such as veal, lamb and goat (with organ meats, of course). In the second volume of the *Canon*, Avicenna observed that milk should come only from “animals that have been fed from the most nutritious plants in a wide area” and also noted that “boiling the milk will make it rancid for the temperament of human beings.”

Advocates of traditional Iranian medicine—writing about Avicenna’s sensible viewpoint on “health preservation” in the Iranian *Journal of Public Health* in 2013—suggest that contemporary medicine has strayed from Avicenna’s observation that it is possible to prevent disease “by obeying healthy nutrition principles.”² Avicenna certainly would not have condoned modern ingredients such as high fructose corn syrup, nor would he have known what to make of Iran’s modern epidemics of fatty liver and heart disease.

INFLUENCES AND INGREDIENTS

Officially considered part of the Middle East, Iran shares borders with Iraq, Turkey, Armenia, Azerbaijan, Turkmenistan, Afghanistan and Pakistan. Due to its central location on the Silk Road trade route, Iran’s cuisine also was influenced by travelers from Europe, the Far East and Africa. These diverse culinary traditions and a variable climate with seasons have helped shape as well as disseminate Iran’s unique and legendary cuisine.

Iran’s traditional dishes revolve around whole-foods ingredients such as red meat (especially lamb and lamb fat), fish (primarily in Iran’s coastal areas) and, more recently, chicken; dairy products made from full-fat sheep and goat milk; rice and wheat; aromatic and other vegetables; nuts such as pistachios, almonds and walnuts; fresh and dried fruits, including

pomegranates, quince, apricots, prunes and dates; and distinctive herbs, spices and flavoring agents such as mint, parsley, saffron, cinnamon and rosewater. A number of Iranian dishes use unripe fruit to deepen flavors and add tartness, including fruits such as sour grapes, sour cherries, barberries and green plums.³

Iran’s agricultural abundance also lends itself to a wide variety of pickled vegetable and spice combinations called *torshi*, which are consumed with most meals. Persian *torshi* tend to use vinegar rather than lacto-fermentation as their mode of preservation, however.

FERMENTED DAIRY PRODUCTS

Iran’s climate and culinary traditions have long been conducive to dairy products, especially fermented dairy. The *Encyclopædia Iranica* asserts that fifty years ago milk and dairy products often supplied from 12 to 25 percent of average daily calories.⁴ In modern times, consumption of dairy products appears to be declining⁵ as well as shifting toward industrially produced dairy.

Traditionally, raw-milk cheeses such as *lighvan* have been ripened in brine without a starter culture, a process that yields an abundance of gut-friendly microflora, including numerous strains of lactobacilli.⁶ Likened to a “Persian feta,” *lighvan* is made by coagulating milk, packing the curd into triangular cloth bags to drain, and placing the drained blocks (covered with salt) in earthenware pots until ready. Other flavorful artisanal cheeses such as *siahmazgi* also are microbiologically diverse⁷ and have a high fat content.

Unfortunately, with the advent of industrial cheese production and imports, artisanal cheese-making in Iran has suffered. A market research company’s 2015 report on cheese in Iran states that “consumption of packaged cheese is becoming widespread and unpackaged products are becoming less popular, even in rural areas of Iran.”⁸ This report also notes that “demand for unspreadable processed cheese, especially pizza cheese, is expected to grow at a very fast rate in response to the rapid surge in consumption of fast food.”⁸

Iranians traditionally also have produced a variety of yogurt-based foods and beverages. According to one Iranian-American blogger, Ira-

nians “have a major yen for yogurt,” consuming it as a condiment, side dish or sauce accompanying most lunches and dinners, or as a principal ingredient of dishes such as chilled cucumber and yogurt soup.⁹ *Doogh* is a yogurt drink made with yogurt, mint, salt and pepper, traditionally brought to a fizzy or effervescent state by adding bulgar rejuvelac, or, in more recent times, through the shortcut of soda water.¹⁰ The *Tehran Times* calls doogh “the Persian Coke” because of its popularity in Iran and its commercial packaging in glass bottles similar to old-fashioned Coke bottles.¹¹

A fermented dairy product called *kashk* (made from drained yogurt or drained sour milk) is another widely used ingredient in Iranian cuisine. Mentions of *kashk* can be found in Ferdowsi’s epic tenth-century poem *Shahnameh* about pre-Islamic Iran. In the present day, *kashk* exists in both liquid form and as a dried powder that can be reconstituted with water. In terms of its role as a flavor enhancer, one food writer describes *kashk* as “an added creamy-like ingredient” that “plays the same role as anchovies, tomato paste and parmesan rind do to add depth of flavor to any given food,”¹² while another writer characterizes it as having an umami flavor “somewhere in between parmesan and goat’s cheese.”¹³ The word *kashk* can also refer to a mixture of wheat or barley fermented with sour milk or yogurt. (The Lebanese relative of this ferment is *kishk*.)



Doogh in old-fashioned bottles.

SOUPS, STEWS AND GRAINS

Cookbook author Yasmin Khan notes that soups are fundamental to Persian cuisine. According to Khan, a clue to the centrality of soup in the diet is the fact that the Farsi word for “cook” is *aashpaz*, which means “soup-maker.”¹³ Iran is known for its wide variety of thick stews (*khoresht*) and soups (*āsh*), many of which use lamb or other meat bones to cre-

ate a flavorful and nourishing broth that surrounds some combination of meat or fish, grains, legumes, vegetables, fruits, herbs and spices. *Āsh-e doogh*, for example, is a yogurt-based soup that features *doogh* in combination with

meatballs, broth, rice, split peas or chickpeas, aromatic vegetables and a variety of herbs such as mint, basil and parsley. In the winter months, *āsh-e doogh* is sold in “steaming vats” as a “warming and comforting” street food.¹⁴ Other popular soups are *āsh-e reshteh* (noodle and bean soup), *āsh-e anar* (pomegranate soup) and *āsh-e sak* (spinach soup), which includes the juice of sour grapes.

Another winter favorite is the *ab-goosht* stew mentioned previously, which is also sometimes referred to as *dizi* because of its traditional slow-cooked preparation in stone crocks by that name. An interesting feature of *ab-goosht* is that after all the ingredients (lamb, chickpeas, white beans, onion, potatoes, tomatoes, turmeric and dried lime) are cooked, the broth is served

Soups are fundamental to Persian cuisine.

A clue to the centrality of soup in the diet is the fact that the Farsi word for “cook” is *aashpaz*, which means “soup-maker.”

THE HEALING POWER OF HONEY

Iran is the world’s eighth largest producer of honey. Avicenna long ago called attention to honey’s many uses as a medicine and source of nourishment. In his *Canon of Medicine*, according to “The Art of Islamic Healing” website, Avicenna prescribed honey for wounds, caries, bacterial and fungal infections and tuberculosis, among numerous other conditions, as well as for detoxification and for prolonging life and preserving activity in old age.²¹

Honey also was a primary ingredient of *oxymel*, a honey, water and vinegar concoction boiled into a syrup and consumed as a beverage as well as for healing purposes. Medieval manuscripts describe over twelve hundred different formulations of *oxymel* that incorporate medicinal herbs, roots and spices.²²

first—and separately—followed by the strained and puréed solids, which are spread on flatbread. One Iranian-born food writer describes it as “a delicious meal even though it might not be too pleasing to the eye.”¹⁵

Iran’s varied soups and stews can be accompanied by rice, often in the form of *chelo* (rice with butter and saffron) or an enhanced style of rice preparation called *polo*, which refers to pilafs cooked with meats, vegetables, legumes, nuts, dried fruit or herbs. Sometimes raw egg yolk is mixed into the rice. A visitor to Iran in 2012 described the country’s varied rice preparation techniques as “an absolute art form” and noted that she had “never seen so many different ways of cooking rice as...in Iran.”¹⁶ The Iranians consume mostly white rice, but they also use simply prepared brown rice (*kateh*) or rice soups as a home remedy for diarrhea.^{17,18}

If rice is an “art form,” wheat bread is Iran’s dietary staple. Iranian bread consumption is one of the highest per capita in the world—three

times more than in European countries—translating to an estimated ten million tons of wheat flour consumed annually. Iranians rely heavily on four types of flatbread (*sangak*, *barbari*, *taftoon* and *lavash*). *Sangak*, which derives its name from the traditional cooking method over hot pebbles, is still one of the country’s most traditional breads, although it is now more likely to be leavened with store-bought yeast than to be fermented as it once was using a sourdough starter. Iranian food scientists have noted that because the whole grain wheat flours that form the basis of *sangak* are high in phytic acid, which impairs mineral absorption, nearly one-third of all Iranians suffer from iron and zinc deficiencies.¹⁹ Using sourdough to make *sangak* can substantially decrease phytic acid content and markedly improve the bread’s flavor and texture.¹⁹

OFFAL

Iranians are not shy about eating organ meats. Heart, liver and kidney kebabs (typically from lamb) are a common street food, and tripe *dolmas* (stuffed grape leaves) are a feature of central Iran. The famous *kaleh pache* dish, a soup intended for late-night or breakfast consumption, features a lamb’s head (*kaleh*)—including the brain, eyes and tongue—as well as its hooves (*pache*), seasoned with lemon and cinnamon. One observer describes the preparation of *kaleh pache* as follows: “The head is stewed...until the meat is tender and can be stripped from the skull.

AB-GOOSHT (LAMB STEW)

2 lamb shanks and 4 lamb necks
2 medium onions
1/2 cup chickpeas and 1/2 cup white beans, soaked overnight
1 teaspoon turmeric
2 Persian limes
2 tablespoons tomato paste
4 tomatoes
3 potatoes
2 teaspoons cinnamon
salt and pepper

1. Wash and dry the meat. Season with salt and pepper.
2. Chop the onions and place in a heavy pot. Place meat on top of the onions.
3. Make a hole in the limes and add to the pot along with the drained beans.
4. Add turmeric, cinnamon and 9 cups water. Cover and cook on medium heat for 2 hours. During this time, make sure to check the pot and skim any foam that might come to the surface.
5. Add tomato paste and mix well. Add fresh tomatoes.
6. Add potatoes and adjust seasoning. You will need a good amount of salt due to the beans and potatoes. Cover and cook everything for another hour.
7. Once done, place a colander over a bowl. Remove meat bones and place in colander. Separate meat from the bones. Remove the marrow from the bones and add it to the soup or meat.
8. Return the broth to the pot and adjust seasoning as needed.
9. Mash or purée the meat with the beans, potatoes and tomatoes. Correct seasoning.
10. The mashed meat and soup are served separately. The soup is eaten first and can be sprinkled with cinnamon. You may put a few pieces of Persian bread in it. The mashed meat is eaten with Persian fresh herbs, fresh lime and bread, and can also be served with fried or grated onion, cinnamon and chopped vegetables.

The brains (fluffy clouds), the eyes, the tongue (plus extra ones) and cheek meat float to the top of the pot ready for skimming off leaving the soupy juice to be sieved and served separately. Apparently if you are a VIP, you get an eye as the best part of the dish and if you are very VIP, you get both!”²⁰

Fish roe (*ashpal*) is consumed in a variety of ways, either as a condiment (salted or cured), grilled, or mixed with eggs and fried in a frittata-like dish called *kuku*. The roe often comes from a fish species called Caspian *kutum*. Iran also has the distinction of having produced the most expensive caviar on record—approximately one thousand dollars an ounce.

RETURNING TO TRADITION

Over the past fifty years, many of Iran’s wise food traditions have fallen by the wayside, with industrial foods supplanting the local and artisanal production of cultured dairy, animal-fat-rich soups, sourdough breads and many other foods that kept people healthy for generations. Even for those who know better, it can take dedication and resources to obtain high quality ingredients in Iran and prepare dishes without nutrient-damaging shortcuts. As chronic disease trends move in the wrong direction in Iran and worldwide, both Iranians and non-Iranians can benefit from becoming (re)acquainted with some of Iran’s delicious and live-giving culinary traditions. ☯☯

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Over the past fifty years, many of Iran’s wise food traditions have fallen by the wayside, with industrial foods supplanting the local and artisanal production of cultured dairy, animal-fat-rich soups, sourdough breads and many other foods that kept people healthy for generations.

Reading Between the Lines

By Merinda Teller, MPH, PhD

Growing and Eating: What Teenage Boys Do Best

My teenage sons have always had hearty appetites. Even as babies, the boys nursed enthusiastically. Later, they developed a genuinely omnivorous appreciation for the seasonally varied, nutrient-dense diet that I put in place after discovering Weston Price's teachings. Lacking the pickiness and skepticism that seem to characterize so many of their peers, their "Oh yum!" in response to dishes like tongue tacos has always been more than gratifying.

Lately, however, the challenge of satisfying my sons' voracious appetites seems to have magnified at least tenfold. Although I was forewarned by experienced parents that this would happen, I still find myself scrambling to help the boys feel both content (in the sense of "I enjoy eating this") and satiated (in the sense of "I am replete and won't look for something else to eat for at least a couple of hours"). Some mothers of boys find humor in the situation, fantasizing about a "magic porridge pot" and other tricks to prevent boys from "crashing like malfunctioning computers, unfit for homework or civilized conversation."¹ In my case, I am interested in understanding just what is going on in those rapidly changing bodies and brains that can possibly require so much nutritional support.

As it happens, both young men and women experience a growth spurt in adolescence that is second only to the rapid growth that occurs in the first year of life.² With the onset of puberty come increases in height, weight and bone mass; cognitive changes; and reproductive maturation.³ Adolescent boys gain more in bone size and mass than adolescent girls.³ To support this intensive and multifaceted period of growth, the total nutrient needs of adolescents are higher than at any other life stage. However, the phrase "total nutrient needs" may not adequately communicate the vital (as in "vitality") importance of providing teens with a high-quality diet containing the

array of nutrients needed to fully serve their physical, cognitive and emotional development and undergird what Dr. William Sears calls the "three As"—athletics, academics and attitude.⁴

QUALITY AS IMPORTANT AS QUANTITY

A 2016 article in *U.S. News and World Report* tells adolescents, "Teens, your brain needs real food."⁵ This headline seems quite promising, but a closer look at the article reveals preachy warnings to stay away from "harmful" saturated fats (sorry, kids, no zinc-rich red meat or full-fat dairy products) and bland advice telling vegetarian teens to forestall nutritional deficiencies by eating more soy foods.⁵ The popular press is rife with such articles, most of which star endlessly hungry teenage boys with nicknames like "The Gaping Maw."⁶ These commentaries encourage careful parents to feed their boys liberal quantities of "heart-healthy plant-based oils" (GMO canola, anyone?), abundant fruits and vegetables (six or more cups per day, and why not, because vegetables without butter are "low-calorie"), and ten or more daily servings of refined and whole grains.⁶

Is this kind of eat-carrot-sticks-and-peanut-butter advice helping the ravenous boys in question? Apparently not, if obesity statistics are any indication. Obesity in our overfed but undernourished adolescents has quadrupled over the past thirty years.⁷ A shocking one-fifth (20 percent) of teenage boys aged twelve to nineteen are obese, with adolescent girls trailing closely behind (18.9 percent).⁸ On the other end of the spectrum, eating disorders also are on the rise among teenage boys, with one nineteen-year-old frankly stating that "Men are pressured to have as little fat as possible—but you've got to pretend like you don't watch what you eat."⁹

Young men and women experience a growth spurt in adolescence that is second only to the rapid growth that occurs in the first year of life.

Betsy Hicks, parent and author of a delightful and down-to-earth volume on picky eating,¹⁰ points out that a nutrient-dense diet that prominently features saturated fats and mineral-rich foods is actually essential for adolescent development. Teenage (and adult) brains require saturated fats to function properly and stave off all-too-common teenage problems such as acne, fatigue and inability to concentrate—and Hicks astutely comments that “today’s teenage sensory-soaked brains need all the help they can get!”¹⁰ In this, Hicks and others draw on the wisdom of Dr. Price’s research with isolated and modernized societies around the world, summarized over seventy-five years ago in *Nutrition and Physical Degeneration*.¹¹ In his comprehensive treatise, Price drew particular attention to the “sensitiveness of the body during the period of adolescence” (which not coincidentally is also the period of greatest susceptibility to dental caries). In addition, Price took note of disturbing increases in crime and delinquency in young people ages twelve to twenty, and linked the increase to the physical and mental degeneration engendered by modern diets.¹¹

“From the chemical standpoint,” the critical difference between “efficient” native diets and diets characterized by the “displacing foods of modern commerce,” according to Dr. Price, was that “all the efficient dietaries were found to contain *two to six times as high a factor of safety in the matter of bodybuilding material*, as the displacing foods” (emphasis added).¹¹ The foods that served a “bodybuilding” purpose varied substantially according to the group and location studied, but in all instances, traditional societies emphasized the most nutrient-dense land and sea animal and plant foods that could be obtained in their context, ranging from the exceptionally high-vitamin dairy products, whole rye sourdough bread and occasional meat of the isolated Swiss to the fish, cereals and sweet potatoes of Kenya’s Maragoli tribe. In contrast, the displacing foods of modern commerce were rather uniform across cultures and generally were dominated by highly refined sugars and flours, canned goods, condensed milk and vegetable oils. Price’s photos of boys with rampant dental caries and facial deformities, which vividly illustrate the weakening effect of newfangled

foods on adolescent development, could easily be replicated by snapshots of some of today’s junk food-reliant young men.

THE LURE OF POLITICALLY CORRECT DIETS

For some high-minded teenagers, anti-saturated fat dogma may dovetail rather conveniently with pro-vegetarian arguments,¹² particularly because the search for “meaningful moral standards, values and belief systems” is a critical developmental task during adolescence.¹³ (It should be noted that moralistic claims in favor of vegetarianism often prevent earnest vegetarian teens from coming face to face with underlying farming realities—including the fact that sustainable farming requires enriching soil with animal products such as bone meal and manure.¹²) Recognizing the fact that adolescent boys also can be preoccupied with physical concerns about weight or athletic prowess, it is perhaps not terribly surprising that a sizeable proportion of teenage boys appear to be persuaded by advice that vegetarianism is a “healthy” lifestyle. A 2010 national poll by the Vegetarian Resource Group found that males aged ten to twelve were the largest subgroup of youth reporting never eating meat (12 percent), versus 7 percent of all youth aged eight to eighteen.¹⁴ Unfortunately, it is quite easy for today’s Internet-savvy young men to find websites reassuring them that they can get adequate nutrients from non-animal sources¹⁵ or asserting that “growing children can do without” the saturated fat and cholesterol that animal foods provide. These teenage boys are far less likely to come across accounts such as Chris Masterjohn’s, whose health dramatically fell apart in the two years following his teenage decision to become a vegan.¹⁶ Masterjohn now describes the “essentiality” of animal foods in the diet throughout childhood development, noting the particular importance of animal foods rich in key vitamins (A, D, K₂, B₆, B₁₂) and minerals such as zinc: liver, shellfish, egg yolks, bone broth and high-quality dairy products.¹⁶

Of course, the majority of teenage boys do not have a problem eating meat—*au contraire!* For this group, the paleo movement has come along to extoll the virtues of eating large amounts of lean meat and vegetables, and to

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demonize non-vegetable carbohydrates such as grains and legumes. An individual posting to an online low-carb message board stated, “If I were a teenage boy, I think I’d totally get into Paleo because (a) teenage boys like meat, (b) it’s not about calorie counting, [and] (c) the inherent coolness aspect of the whole Paleo concept of being like cavemen.”¹⁷ A suggested menu on a leading paleo website proposes eggs scrambled in olive oil for breakfast, fruit or lean beef for snacks, chicken salad with olive oil for lunch, and grilled skinless turkey breast with steamed vegetables for dinner.¹⁸ This might sound like a virtuous and even colorful assembly of unprocessed foods, but it is hard to fathom how these recommendations could meaningfully sustain the development of teenage boys over time. Another paleo website recognizes the fact that adolescent development imposes high energy demands that require plentiful carbs and encourages teens not to stint on sweet and white potatoes, plantains and bananas.¹⁹ Of course, paleo adherents are correct in asserting that modern breads, cereals and pastas are not en-

hancing adolescent health—and consumption of whole grains does require careful preparation to neutralize physiologically stressful antinutrients. With proper preparation, however, teenage boys surely should be allowed to derive nourishment (and enjoyment) from sourdough breads, soaked porridges, and appropriately prepared lentil soups served with ample animal fats like butter and cream.

LONGER-TERM IMPLICATIONS

Adolescents have the reputation, whether well-deserved or not, of being more focused on the present than the future. Since many of today’s teenage boys—who are tomorrow’s fathers—are more likely to be eating doughnuts than liver on a regular basis, what are the longer-term implications of this nutritional insouciance?

One of the most crucial and sobering observations made by Dr. Price had to do with the unexpectedly rapid influence of a nutrient-poor diet: “Whereas it has been assumed that gross changes in physical form could only result from influences operative through a vast number

MEAL AND SNACK IDEAS FOR TEENAGE BOYS

- Focus on old-fashioned stick-to-your-ribs breakfasts like bacon, eggs and sourdough toast—or soaked porridges with plenty of butter or cream. Sourdough pancakes with sausage make a nice treat on the weekends.
- Whenever possible, cook enough food to provide leftovers. For example, leftover meats or beans can provide the basis for any number of creative burritos or wraps.
- Use leftover sautéed greens or other vegetables in baked eggs. (Put vegetables on bottom layer of greased muffin tins, top with grated cheese, crack open a pastured egg on top of each muffin, and bake at 350° for about 20 minutes.) Baked eggs can be cooked ahead.
- Always cook brown rice (after soaking for about 8 hours) in butter and/or coconut oil and broth. For two cups of brown rice, for example, use two cups broth, one cup water, and one cup coconut milk. The result is creamy, filling and delicious.
- Cream soups can be sent in a thermos to school for lunch with some homemade sourdough croutons.
- For dinner main courses, you can’t go amiss with stews, roast chicken with cream sauce, or meatloaf (which not only allows for endless ingredient variations but also can easily accommodate some hidden liver or heart). For taco, tostada or burrito meals, there are several brands of sprouted tortillas available to ensure that the grains in the tortillas are digestible.
- Don’t shy away from white and sweet potatoes. Stuffed potatoes and potato skins with cheese are easy to make and sure to please. Sweet potatoes also are extremely versatile, for example, as “chips”—slice thinly with a mandoline slicer, brush with coconut oil, sprinkle with sea salt and broil for ten minutes.
- Always have good snacks on hand: raw milk cheeses, salami, homemade jerky, crispy nuts, nut cookies, kefir or yogurt smoothies, and even homemade ice cream. A glass of raw milk makes a great snack at any time of day.

of generations, ...*gross changes can occur in a single new generation* (emphasis added).¹¹ Price urged modernized societies to remember that “the preparation for the next generation should begin early in the life of the preceding generation.” Moreover, Price could not have dreamed of some of the modern-day laboratory concoctions that now pass as “food.” A recent blog post about soy, for example, warns young men that soy protein powders can “strip their masculinity,” describing a study of twelve men who experienced a 19 percent drop in serum testosterone over a twenty-eight-day period of ingesting soy protein powder supplements.²⁰

Teenage boys cannot hope to build an appropriate scaffolding for robust health and reproduction during adulthood if they are subsisting on chips and soda. Of course, as one maternal blogger observes, “long-term consequences are nowhere near the radar” during adolescence, and lectures by parents are unlikely to soften teens’ sense of invincibility.²¹ On the other hand, teenage boys are certainly mature enough to begin to understand “what is good and what isn’t,” even if they won’t admit it.²¹ Fortunately, parental willingness to cook regularly with ingredients like butter and bone broth greatly facilitates the task of preparing appetizing meals that teenage boys will not only accept but gobble up. ☺☺

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Teenage boys cannot hope to build an appropriate scaffolding for robust health and reproduction during adulthood if they are subsisting on chips and soda.

DELI STYLE AT HOME

In my household, sliced sandwich meats are a hot commodity for lunches and snacks. Although we are lucky enough to have access to an old-fashioned butcher who provides a range of delicious options with clean ingredients, none of them come cheaply. Sandwich meats purchased at the grocery store—even those billed as “natural and organic”—are not necessarily any less expensive and often feature obnoxious stabilizers like carrageenan, an additive with no nutritional value that has raised a red flag for its gastrointestinal inflammatory effects since the 1960s.

What’s the solution for hungry boys and stretched pocketbooks? Invest in a meat slicer! Although a decent meat slicer may require an up-front investment ranging from \$100 to \$300,²² it makes it possible to cook a whole ham, turkey breast or roast and slice the meat thinly on demand. Over time, this can save a lot of money, while providing hungry boys with meat that is tasty and always fresh.

The Wise Traditions Pantry

MEALS ON THE GO:
PREPARING HEALTHY FAMILY MEALS FOR WORK, SCHOOL AND TRAVEL
By Maureen Diaz

Whether or not you have mastered the art of wise traditional cooking, preparing meals for the family on the go adds another dimension to eating well. And while the thought of packing foods for trips, school and work may seem daunting, it need not be as difficult as it seems. All it takes is a little creativity and forethought!

THINKING OUTSIDE THE PROVERBIAL BOX

Most families' go-to solution for meals away include pre-packaged foods such as "Lunchables," bologna and cheese on white (or "whole wheat") bread, sugary so-called "healthy" snacks like flavored yogurt or jello cups, and chips. None of these is truly nutritious or satisfying, and yet even many die-hard

healthy-eating fans still rely on them. What a shame, for all the hard work and dedication at family breakfast, dinner and weekend meal times seems to be diminished in the face of these convenient, fake foods. But what to do?

If we really want to promote health among our families and ourselves, we simply must make the added effort to provide healthy, wholesome, and tasty foods even when it seems inconvenient or difficult to do so. I have personally seen what good food does for my own family, as well as what happens when even a small, but regular, part of their diet is made up of modern processed foods. Two of our children react with emotional issues, another with weakened health, teens with acne. This is not good!

So instead of resigning ourselves to having



Chefs Maureen Diaz, Al, Dean Donnell and Rosie Ueng



Bowls mounded with butter.



Bread for four meals, prepared by Maureen Diaz.



Delicious banquet dinner!

no choice but the standard fare when away from home, let's find better alternatives!

**PROTEIN DOESN'T HAVE
TO COME FROM A BOX**

We all know the sorry state of our modern CAFO-produced meats and the implications surrounding the consumption of such. Our school cafeterias are filled with not only these, but harmful soy products as well. And while organic, pasture-raised meats may seem expensive, they do not have to be out of reach for most.

In a previous article, I recommended many products from the “club” stores such as Costco. This is a good starting place for finding acceptable alternatives as they all carry a variety of more natural luncheon meat products, and organic cheeses to go with them. Thus, sandwiches on either homemade, whole-grain artisan or sourdough breads, or a purchased sprouted bread (such as Manna Organics brand), are an easy choice.

But for those who cannot, or choose not, to eat bread, these same meats and cheeses can be rolled up as a lettuce wrap (with a dollop of homemade mayo or salad dressing) to make a sandwich. This is what I provide nearly every day for my husband, who cannot eat any grains at this time. His favorite choices for meat usually include prosciutto or salamis, which he enjoys wrapped around a lovely hunk of brie.

I also often cook whole chickens or roasts of pork or beef. These are then sliced thinly for either sandwiches or hearty boxed lunches, accompanied by vegetables, cheeses and ferments.

In the past I have also enjoyed making pemmican, jerky, and naturally-cured cuts of meat. There are now several such products on the market from sources such as Epic, Grassland, US Wellness, and others (see the Foundation's

Shopping Guide for resources). These pre-packaged varieties are super convenient, though somewhat pricey. Making your own is much less expensive and quite easy (see sidebar).

An old-fashioned and practical way of preserving and transporting meats is to cover them with a generous layer of fat. Duck confit is a classic example of this, but it may be prepared with less expensive chicken or turkey as well. You can pull all the tender meat off the bones after making broth, chop the meat very finely, season with salt, pepper and herbs, put it into a ramakin or crock, and pour duck fat, goose fat or lard over the meat to cover it completely. Kept in the fridge, the confit will last many months.

We have made our own cooked loose sausage meat, covered it with lard or bacon fat, and then carried it in a lunch box with no fear of rancidity. Use high-quality, pastured ground meat for this, and scrape away the excess fat before biting in.

Another delicious and easy protein, which contains loads of good fat and fat-soluble vitamins A and D, is pâté. We love to eat it by the spoonful as a snack, or slathered on a thin slice of sourdough bread as a sandwich.

Our family relies quite heavily on a variety of cheeses for protein in addition to meats, some of which are purchased at grocery or club stores, and others direct from local farms. Cheeses keep well in lunch boxes or while traveling. Slice and eat on good-quality crackers, or just eat small chunks of cheese with crispy nuts and dried fruit.

THE INCREDIBLE, EDIBLE EGG

And who can forget the lowly egg? Eggs are such a simple solution for protein and flavor, hard or soft-boiled eggs being the most easily transportable, delicious, nutritious protein available!

So instead
of resigning
ourselves to
having no
choice but
the standard
fare when
away from
home, let's
find better
alternatives!

HEALTHY PROTEIN AND SNACK IDEAS FROM THE STORE
(See our Shopping Guide for recommended brands)

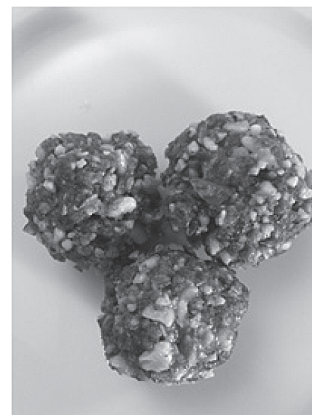
Pemmican or jerky (without MSG or natural flavors)	Exo bars (without cocoa, bran or natural flavors)
Fruit leather (without sugar or additives)	Plain whole yogurt (add your own fruit)
Popcorn (without partially hydrogenated vegetable oils)	Organic potato chips (in lard or coconut oil)
Pork rinds (plain)	Organic plantain chips
Coconut chips (without sugar)	Organic apple sauce cups (without additives)
Sardines or smoked herring (in water or olive oil)	Whole milk cheese

DATE NUT SNACK BALLS

1 1/2 cups crispy nuts
3 cups dates
1 tablespoon organic peanut butter
1/2 cup shredded, unsweetened coconut
2 teaspoons vanilla
1/2 teaspoon cinnamon

A yummy snack for the lunch box!

In a food processor pulse the crispy nuts until crumbly. Add dates and pulse until finely crumbled. Add peanut butter, then remaining ingredients. Pulse. Form into balls, about 1 1/2 inches. Store in a sealed container at room temperature. Enjoy!



Date Nut Snack Balls

GELATIN FRUIT SNACKS

2 cups organic fruit juice, no sugar added (I like Ceres brand)
1 cup puréed frozen fruit (we like cherries)
1/2 cup organic gelatin
1/4 cup raw honey

Add some fun to the kids' day!

Sprinkle the gelatin over the surface of the fruit juice in a medium-sized, heavy-bottomed sauce pan; let soften for 5 minutes. Slowly warm the solution over medium low heat, whisking to incorporate the gelatin until melted. Remove from heat and add honey and puréed fruit, blending well. Pour into silicone molds or a flat-bottomed dish and chill, refrigerated, until set. For added benefit, add Radiance C to the solution before molding, whisking in thoroughly along with the honey.

SIMPLE SALT-CURED BEEF OR PORK

1 pound Celtic, Himalayan, or Real Salt
1/2 pound Sucanat, Rapadura, Muscavado or Coconut Sugar
3-5 pounds beef round roast or pork loin, weighed accurately

Optional seasonings:

1 tablespoon cracked peppercorns
3-5 cloves garlic, smashed
3 crushed bay leaves
1 tablespoon rosemary, thyme, and/or sage leaves

This is a delicious alternative to lunch meat!

Combine the salt, sugar and optional seasonings. Choose a glass container large enough to hold the meat while small enough to be a close fit. Place enough cure into the container to coat the meat thickly and thoroughly, working into all sides. Seal tightly and refrigerate for seven days, pouring off the resulting liquid daily. If necessary, rub in more cure to keep the meat coated.

Check for firmness. Meat should firm up between 7-21 days, depending on thickness of meat. A 3-pound hunk of meat will shrink and cure for about 14 days, longer for thicker pieces, but weigh the meat. When it has reduced in weight by 35 percent, it is sufficiently cured.

Meat thus cured will keep, covered, in a cool, dark place for months. Slice thinly for sandwiches, chop into small pieces for stews, hash and other dishes, or slice off as desired for eating out of hand.

I often boil a dozen or more eggs at a time (adding a pinch of baking soda to the water makes them incredibly easy to peel). These can then be turned into egg salad (more eggs in the homemade mayo!), deviled eggs, or simply eaten on their own with a pinch of salt. Again, toss in a chunk of raw cheese and you've plenty of protein, high-quality fat, and rich nutrients for a meal!

HOT SOUPS FOR THE ROAD

A good thermos is an obvious necessity if you want to provide a hearty, hot meal for lunch time. When traveling as a family, we find that an extra-large thermos does the job. I fill ours with homemade soup made from the ever-simmering stock on our stove top. Often I scoop from this pot into a smaller pan and poach our eggs in the rich broth along with ghee, garlic, turmeric, ginger and tamari. The addition of coconut milk adds a delicious richness as well. This is a favorite breakfast-on-the-go for several in our household and also doubles as lunch at times for a hungry husband!

An easy way of providing hot soup or stew without carrying the liquid concoction is to place dried vegetable chunks, herbs, parboiled rice and reduced stock (either consommé or actually dehydrated stock, which is much easier) into a steel or glass container. Hot water is added to this, stirred, and allowed to sit for five minutes (when on the road hot water is always available from a convenience store coffee machine or can be carried in a thermos). Dried meat can also be

added, which makes for a very hearty and easily transportable meal.

DON'T FORGET THE RAW DAIRY

Raw dairy is not so difficult to transport, particularly with a thermos or insulated lunch pack. I often send creamy, raw milk in pint-sized jars, with a freezer pack in a lunch bag. For kids heading off to school a raw yogurt smoothie made with frozen berries, a little vanilla and touch of honey, and raw egg yolk provide plenty of satisfying protein and fat, as well as good taste. A small container can also be filled with raw-milk yogurt for a mid-morning snack.

LET THEM EAT CAKE!

Every kid loves dessert, and dessert need not be complicated. Of course, whole fruit is simple, but why not brighten your family's day by providing delicious, nutritious cookies or a slice of cake in their lunch box? Homemade jello is a favorite with my family, while my husband likes cheesecake with organic cream cheese, honey and a date-nut crust. Any of these are easy to carry in the proper container (with freezer packs for the jello or cheesecake), or wrapped in waxed paper.

I hope that with these ideas you will be encouraged to provide your family, and yourself, with better nutrition, energy, and flavor for your school, work, and traveling days!

Note: There are many options available for suitable containers to send your family off with healthy foods. Check for stainless steel and glass thermos bottles, insulated lunch bags, hard plastic and glass containers, etc., on Amazon (through WAPF's affiliate link to benefit the Foundation), and at discounted retailers such as Marshalls and Home Goods. ☺☺

Maureen, husband George of nearly thirty years and their rather large family live a very full life on a mountain top in Virginia where she enjoys learning, teaching, growing and creating new things every day. Please send Maureen your questions so she can address them in this column. She can be reached at: mamasfollies@gmail.com.

CORRECTIONS

In the Fall 2016 article on the big box stores, please note that Daisy sour cream and Breakstone sour cream are not listed in our Shopping Guide as they are made from homogenized cream.

In the Fall 2016 article, "Raw Milk Debate at the IAFP: A Clash of Cultures," Mark McAfee was inadvertently listed instead of David Gumpert as participating in the Harvard raw milk debate.

GRATITUDE

To Kristen Files for the wonderful photographs from Wise Traditions 2016 and to her daughter, Ashlyn, for editing the video on DC chapter leader Hilda Gore's visit to Kenya.

To WAPF staff members Tim Boyd, Kathy Kramer and Celia McGovern for their tireless help at Wise Traditions 2016.

To Sandrine Love of Nourishing Our Children, for her help and enthusiasm before and during Wise Traditions 2016.

Farm and Ranch

WHY IS MEAT FROM GRASS-FED ANIMALS SO EXPENSIVE?

By Will Harris and Will Winter

The industrial farmer is incredibly efficient, but the unintended consequences of this efficiency fall on the backs of consumers and the environment.

To the novice, it seems that meat from grass-fed animals should cost less than other meat since the grass-based farm doesn't have the extra expense of grain, antibiotics, confinement buildings and all the other trappings of modern beef production.

THE TRUE COST

The first thing to consider is that the price one pays for honest grass-fed beef more accurately reflects the true cost of raising cattle for food, while "cheap" beef only appears to cost less. There are hidden and mostly unpaid costs involved with the production factory or feedlot meat. Over the last seventy years, reductionist science has given conventional farmers many tools to take the cost out of meat and poultry production. These tools include various performance-enhancing drugs, artificial feeding and ultra-confinement growing conditions. The industrial farmer is incredibly efficient, but the unintended consequences of this efficiency fall on the backs of consumers and the environment.

Examples of this efficiency are seen in the time required, the amount produced, and the cost of production. Grain-fed cattle may be slaughtered at sixteen months and weigh thirteen hundred pounds, while grass-fed cattle are typically slaughtered at twenty-three months and only weigh eleven hundred pounds. Grass-fed takes longer and weighs less.

Industrial chickens can be processed in five and a half weeks and weigh four to five pounds. They cost about one dollar per pound to produce. Pastured chickens are typically slaughtered at twelve weeks and weigh three to four pounds. Production cost for a pastured chicken can cost up to four dollars per pound.

The feedlots are basically a factory production line: young cattle being prodded into the front door, then a few months later, they are prodded out the back door onto trucks headed

to massive slaughter plants. Throughout their stay, cheap GMO grain is shoveled to them along with other so-called food such as bakery waste, rejects from candy factories and waste from the government-subsidized and protected ethanol plants. Along with the artificial feed, they are given growth hormones, appetite-stimulating chemicals and sub-therapeutic antibiotics.

Towards the end of the artificial feeding regimen, the cattle are so toxic from eating all the wrong feeds and from ingesting drugs that they would likely die if kept much longer. Meanwhile their manure, which in the right circumstances can serve as a valuable, natural fertilizer, is nothing more than a hazardous, toxic waste that is impossible to dispose of in an environmentally sound manner.

Consumers who have gained an appreciation for animal welfare and regenerative farming practices ask farmers to forgo the use of the tools that reductionist science provides to lower product cost. The result is increased production costs for the farmer.

CORPORATE SCALE

Virtually all factory or feedlot beef is corporate-owned and the scale is enormous. The difference in the cost of labor is huge. On a grass-based farm, a herd of seven hundred cows requires the care of three cowboys. Yet in a CAFO feedlot, three employees can handle fifty thousand head of cattle.

On corporate farms, profit margins can be razor-thin but the corporate owners can still reap huge dividends. They are also likely to be eligible for gigantic tax breaks.

Meat processing in factories uses huge machines. Machines need few people, and they have no need whatsoever for community or small towns. They thrive on recently-arrived immigrants, who will work for practically nothing, can be warehoused in dormitories, and who

they burn through very quickly.

It is all about scale. We all know what Henry Ford did to the cost of making an automobile. All commodity beef slaughter plants are of such a vast scale that to witness them in action is a ghastly unforgettable sight. In these mammoth, noisy, and frightening facilities an entire beef animal from walking in alive to boxes of frozen meat headed for trucks can be processed. These huge plants do this utilizing only two man hours of labor per steer, versus the small plant which will expend over eight man hours per beef animal!

The little time needed in the feedlot model is due to automation, relaxed rules about how employees are treated, and other ways to cut

corners. Problems such as repetitive task injuries, underpaid immigrant workers, excessive waste pollution, and the lack of humane conditions for man and beast are not factored into “cheap food.”

The hidden costs of cheap food from massive producers includes the huge annual erosion and loss of topsoil from production of grain; the pollution of the air, water and soil; and the loss of farm families, farm communities, and small towns throughout our country. This loss of the ability to make a simple and honest living on the farm was what inspired Wendell Berry to pen the essay “What Are People For?”

Meanwhile, virtually all grass-fed operators are small family businesses. These tiny enterprises are unable to benefit from the efficiency of scale. Often, all family members are involved in taking care of the cattle, the land and the survival of the farm. They cannot survive without a steady farm income, one that cannot come from only a few head of properly-raised cattle. When profitable, these small farms have a positive effect on farm communities and small towns.



White Oak Pastures is a pasture-based, fully integrated farm, the only farm in the U.S. with its own USDA-inspected red meat and poultry processing plant.

THE ANNUAL WAPF FARM TOUR

Every year Kathy Kramer and Will Winter organize the WAPF Annual Guided Farm Visit. This year's visit to White Oak Pastures was a dazzling experience that exceeded all our expectations! Owner Will Harris gave attendees the insider's view of everything this complex farm offers, which ranged from his progress in transforming the nearby and nearly lost town of Bluffton back to a real farm community, to an actual tour inside their on-site slaughtering facility. The group saw worn-out cotton, peanut and tobacco fields now in various stages of regeneration and restoration, all part of Will Harris' vision for a better world and a better community.

In addition, the group stopped at Fitzpatrick, Alabama for a tour of the artisanal manufacturing business To Your Health Sprouted Flour Company, an enterprise that began in founder Peggy Sutton's kitchen.



Will Harris and Will Winter enjoy a conversation with Lee and Mary Graese of NorthStar Bison.



Shopping at the White Oak Pastures farm store. Part of the effort to restore the town of Bluffton, Georgia is renovating old buildings for new purposes.

COMMODITY

Another factor keeping the price of commercial beef lower than grass-fed is the fact that it has been made into what is called a “commodity.” Once any product, in this case a farm product, has been made into a commodity, the producer becomes a “price taker” instead of a “price maker.” The difference between a commodity meat and a niche market meat is that in this case, anyone and everyone can produce “grass-fed beef,” and no one but Farmer John could make “Farmer John’s grass-fed beef.” We can pick up a newspaper or listen to the radio to find out the commodity price for today, but only John Smith can dictate the price for Farmer John’s grass-fed beef. This is called the free market. It is then up to Farmer John to tell his story and educate his customers about why this beef is the most desirable option and worth the extra price.

When a product is commoditized, the producers will receive only a dictated profit margin. If that price is below what it costs to create the product, the producer can either take a loss (until the money runs out) or cut corners to make a cheaper product. We have seen both.

WELFARE CHECKS

Even worse, the government has been lobbied to provide what are basically “welfare checks” to farmers who produce commodity grain. Using taxpayer dollars, farmers receive a premium over the commodity price. They are paid if there is crop failure or some other disaster. They are frequently paid not to farm if there are extreme surpluses in grain. This government-sponsored “free” grain goes to the feedlots in order to produce cheap beef.

HEALTH COSTS

Since contamination with pathogenic bacteria is low to non-existent in meat from grass-fed animals, and since pathogens are almost ubiquitous in feedlot meat, the health of the people who eat it becomes another issue that affects true cost. No one wants to add in the medical costs of treating all the cases of factory-food-induced food poisoning, with annual illnesses requiring hospitalization running into the tens of thousands of dollars, and food-related deaths into the thousands annually.

Furthermore, all the chemicals that the animals get end up in the meat, specifically in the fat. Antibiotic resistance is real, and the routine antibiotics given to feedlot beef are contributing to the problem.


MARKETING

Lastly, much of what affects the prices that consumers pay occurs at the retail end of the value chain. Huge retail grocery stores and supermarkets truck in their beef in fifty-three-foot reefer trucks and create enormous displays of commodity beef. They like to create the illusion of being the least expensive option in town, so that many common products, the ones consumers are most likely to compare, are promoted as “loss leaders.” They cut them down to a tiny profit all the while marking up the prices of other goods that people rarely cost-compare.

Additionally, we have seen meat managers adding an almost double mark-up on grass-fed meats on the basis that they find them more difficult

to market and they require more time explaining how to cook them. Since the meat-cutters have been trained on feedlot beef, they prefer selling it and frequently discourage the customer from purchasing grass-fed. This leads, in many cases, to more unsold and expired products being destroyed.

THE REAL QUESTION

All in all, producers of meat from grass-fed animals believe that it is critical to reframe the question. Once one is exposed to the reality of the meat industry, one no longer needs to ask why grass-fed meat is more expensive. It’s actually not. The real question is: Why is it that factory feedlot meat appears to be so cheap? A little bit of investigation clearly shows that, in general, cheap food is the most expensive food of all. 

Will Harris runs White Oak Pastures, his family farm of one hundred fifty years, where they practice and teach environmental sustainability and humane stockmanship. White Oak Pastures is the only U.S. farm having both their own USDA-inspected red meat and poultry processing plants.

Will Winter has a doctorate in veterinary medicine, owns and operates Grassfarmer Supply, is the author of The Holistic Veterinary Handbook, lectures on holistic livestock herd health, sustainable agriculture and traditional nutrition, and works as a herd health consultant for grass-based livestock producers.

Homeopathy Journal

IN PRAISE OF MENFOLK: A HOMEOPATHIC THANK YOU!

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

Maybe it's because I'm a mother who has raised three boys of my own. Or it simply could be my observations as a former feminist who has mended her ways. But have you noticed that men have been coming up with the short end of the stick in the last decade or so? I have.

For instance, there are programs specifically designed to help girls enter the sciences; large companies are obliged to hire a certain quota of women while men get overlooked; and then there's the way the education system approaches boyish behavior in grade schools. The expectation is that boys need to act more like girls.

It saddens me that we don't celebrate masculinity enough and instead berate men and expect them to "chick-a-fy." Indeed, in Western countries the tide against women turned in their favor decades ago. As such, I sometimes wonder whether female entitlement programs are undermining men.

THERE'S A DIFFERENCE!

In case anyone has failed to notice, men are different than women...and if I may say, delightfully so! I witness these differences every day in my practice. Although the homeopathic medicines I use are not always different depending upon the sexes—arthritis is met with *Rhus tox* whether it's found in a woman's fingers or a man's knees—there are cavernous differences in the homeopathic choices for men's versus women's emotions and hormones, for example. Allow me to elaborate. When a woman is experiencing emotional turmoil, such as feeling overwhelmed by her motherly duties, the medicine that most often corrects the problem is *Sepia* 200 or *Ignatia* 200. But when a man is overwhelmed by his responsibilities, he is frequently helped by the medicine *Aurum metallicum* 200.

GOLD METAL FOR MEN

Aurum metallicum (homeopathic gold) is an appropriate choice given that men often work in demanding fields that require a stoic posture, and it can be a homeopathic savior if these stresses result in depression and a state of feeling overwhelmed. "The patient may feel no connection to life, existing in a dark and isolated void," says Roger Morrison of *Aurum metallicum* in his *Desktop Guide to Homeopathy*. Those in need of this medicine report an inescapable desire to step away from responsibilities. This is often accompanied by chronic fatigue. Even if a man suffers only from chronic fatigue, the medicine has been shown to address it.

Interestingly, *Aurum metallicum* is also one of our most prominent medicines for loss of male sexual prowess. It is called for when there's a low sperm count, lack of sexual desire and impotency. It is also one of our best homeopathic medicines for angina, particularly palpitations that are worse at night as the result of emotions and anxiety. It's not uncommon to see this list of sufferings all connected to the same man. Using *Aurum metallicum* 200 once every other day for a period of many weeks will often set a man straight.

FOR QUIET ANGUISH

Another medicine that is a powerful antidote to the woes of men is *Staphysagria*. In today's climate of high unemployment for males, with women more readily hired in the workplace, many men find themselves at home for months, even years, after being laid off. This demoralizing state can cause a quiet anguish. Even after finding a job, this mental state can leave men more susceptible to physical ailments, as well as continually troubled emotions. Such sufferings are palpable and can result in depression, self-deprecation and shame. *Staphysagria*

Staphysagria 200 can restore men's optimism, thus helping to point them in the right direction.

Thuja occidentalis consistently has been shown not only to reduce inflammation, but to correct urinary suppression and many other male urinary and prostate disorders.

200 can restore men's optimism, thus helping to point them in the right direction. In my experience, *Staphysagria* 200 taken once per day for days, weeks and even months, in some cases, is enough to pick a man up off his knees by offering hope of a brighter future.

Can any of these medicines be useful for women, too? Certainly. However, men suffer differently than women.

REPRODUCTIVE CONCERNS

Take men's reproductive concerns: prostatitis, which is inflammation occurring in the prostate gland, is a common condition in older men that is best met with the homeopathic medicine *Thuja occidentalis*. It consistently has helped reduce inflammation, and also correct urinary suppression and many other male urinary and prostate disorders. We are directed by Dr. William Boericke in *Pocket Manual of Homeopathic Materia Medica* that "*Thuja occidentalis* is particularly curative of pain and burning felt near the neck of the bladder with frequent and urgent desire to urinate, as well as general prostatic enlargement." It also happens to be a principal medicine for men who have been over-vaccinated, such as those who have served in the armed forces.

I'm reminded of Albert, who was told by his doctor that the swollen state of his prostate was such that it needed to be treated or else he would be more likely to contract cancer in the future. An interesting aside is that the Stanford University-associated website *Pelvic Pain Help* declares, "Most of the men we see who have been diagnosed with prostatitis are type A personality, successful, intelligent, ambitious and responsible." Perhaps this fact was not taken into consideration when Albert's doctor prescribed antibiotics in spite of not finding a bacterial infection. Albert used his type A personality to seek a more intelligent solution. That's when he found *Thuja occidentalis* 30 and took it twice daily for about two months. He also took *Sabal serrulata* 6X each day within a few minutes of taking the *Thuja*.

The second night after taking the two medicines was significant because Albert slept all night without waking to urinate his usual three to four times. Not having any prior experience

with homeopathy, he chalked it up to coincidence. By the following week, though, when the sensation of sitting on a rubber ball had diminished and the urgency and dribbling had improved, he was so impressed that he shared the good news with his brother who suffered from the same condition, and his brother, too, resolved it with *Thuja occidentalis* 30 and *Sabal serrulata* 6X.

A GESTURE OF APPRECIATION

Despite our society's decades-old battle against masculinity, I'm not worried about men. That's because I believe they have testicular fortitude. Indeed, how else would they have forged the seas, traversed the skies, built and piloted planes, composed great symphonies and conquered foes for the good of their families and society? Allow me to offer this small gesture of appreciation with tiny pills of homeopathy to the sex that has achieved so much and that I believe deserves our deepest respect and care. It's the least that I, as a woman, can do to show my gratitude. ☯☯

Joette Calabrese, HMC, CCH, RSHom (NA) is an international homeopathic consultant, educator and mom who raised her now-adult children over the last thirty years with nothing but homeopathy and WAPF principles. Her primary online course, Good Gut, Bad Gut is the ultimate step-by-step guide for using homeopathy to uproot food intolerances, gastrointestinal conditions and seemingly unrelated ills when diet alone isn't enough. Joette refers to this as "the niggling 40 percent." She uses reproducible, scientific and practical homeopathic methods to teach families how to treat these conditions themselves. Her methods allow folks to use homeopathy and put families back at the center of their own health strategy. You may reach Joette at Contact@JoetteCalabrese.com or (716) 941-1045 to inquire about a private appointment or course information.

Technology as Servant

CHLORINE-FREE SWIMMING POOLS

By John Moody

Recently the FDA announced the plan to remove antibacterial soaps from the market. The news of late has been awash with coverage on the scramble to find alternatives to the failing antibiotics that we have overused and relied upon far too long.

This revolution extends even to your backyard—like the big push for antibacterial soaps, the attachment to using antibacterials in swimming pools remains. Unfortunately, the human body absorbs far more chlorine and other chemicals from swimming and showering than from drinking or hand washing. So why are they no longer acceptable in soap, but required for swimming pools? What alternatives to chlorinated swimming pools exist that still render the water safe and clean? As it turns out, there are many.

LIVING POOLS:

A TRULY “GREEN” SWIMMING OPTION

Living pools are “miniature lakes,” truly living ecosystems that keep water pure by using plants, naturally occurring microbes and other microorganisms to purify the water. When properly designed and managed, such systems should require no chemicals of any kind. Such pools are rare in the U.S., but have garnered a good deal of attention in recent years and are growing in popularity. One hindrance is cost—living pools are generally more expensive than chemical-based pools. Living pools also take up more space, or require a smaller pool, since a filtration pond is required as part of the system.

One question living pools raise is how

appropriate they are for larger, public or high-traffic pools, like at fitness centers. An ecosystem can only take so much, some say, no matter how resilient and well designed. Yet Europe now boasts over twenty thousand such pools, many open to the general public. It appears that the biggest hindrance in the U.S. to better pools isn't technological progress, but regulatory excess. Most state regulations on public and for-profit swimming pools don't allow people to even consider natural pools as an option, or increase the cost well beyond the already high price tag,



A naturally filtered swimming pool.

especially for public or for-profit pools.

The current exception is the Webber Natural Swimming Pool in Minneapolis, Minnesota, which has “a natural filtration system that will

use plants in a nearby pond rather than chemicals to treat the water.” The regeneration pond located next to the pool allows the water to be cleaned and then returned to the main pool for use, and is home to all sorts of plant and aquatic species that participate in the process. Webber pool is a “warts and all experience,” as the frogs and other wildlife in the pond are a part of the swimming experience, even if only at a close distance. They are also necessary—such ancillary species help control mosquitoes and other pests. These pools, environmentally and otherwise, are truly a “green” thing (both green in terms of positive environmental impact, but also green in terms of cost).

Living pools are “miniature lakes,” truly living ecosystems that keep water pure by using plants, naturally occurring microbes and other microorganisms to purify the water.

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STAUNTON'S PUBLIC POOLS

If living pools are not appropriate for all places, what are other, perhaps more affordable options? The Gypsy Hill Park pool in Staunton, Virginia, uses one alternative—a system that reduces chlorine usage by over 80 percent while delivering a top-notch swimming experience. It was our family's trip to this glorious pool that was the inspiration for this article. Our kids love to swim, but dislike the stinging eyes and other side effects of heavily chlorinated pools. A minute after diving into the Gypsy Hill Park pool, our kids knew and were vocal about the difference.

I was able to speak with pool manager James Corbett about their system, and the awards it has rightly won. "It allows us to save money, to get the most punch from the least amount of chemicals. By using perlite as a filtration medium, we are able to reduce operational costs, chemical usage, maintenance issues, residue buildup, and component wear and tear."

Their approach clearly works, as the pool's clarity and quality are striking. No off smells, no stinging eyes, yet brilliantly clean and clear water—water so good that it has won state-wide recognition.

IT'S A PARTY!

Even closer to home for us, a member of our buying club in Louisville hosts multiple summer pool parties. The filter system is made by EcoSmarte, whose "natural oxygen and ionic copper systems have root technology from NASA and have been installed in all 50 U.S. states and over 100 countries since 1994." Sounds fancy, but the experience of swimming in our friend's pool was all the proof we needed. No stinging eyes, no strong or strange smells,

no dry skin—just clear and clean water.

The copper in the pool runs between .4 to .7 ppm (parts per million) to keep algae in check. The system also uses ozone to control bacteria and other microorganisms. Interestingly, the process produces water that feels really "wet" because of the reduced surface tension of the water molecules.

Concerns regarding copper and other metal-based systems are person-dependent. If you have elevated copper levels or other health issues that copper exposure exacerbates, a pool such as this is probably a poor choice, as copper is ab-

sorbed through the skin (albeit in very small amounts), as well as by any water a swimmer may swallow. Also, if you already receive copper exposure through copper plumbing in your home or through your occupation, a

copper-based pool system is probably not for you. If you have normal or low levels and low-to-normal exposure, such a pool is probably harmless or perhaps possibly helpful.

DON'T BE SALTY

Some think that salt pools are superior to chlorine. But a salt pool is still just a chlorine pool, one with less chlorine involved and lower chlorine levels—resulting in less drying of the skin, less stinging of the eyes, and less negative environmental impact—but it is a chlorine pool nonetheless, and still creates chloramines and other chlorine by-products. Yet there are ways to reduce the amount of salt or chlorine needed to maintain a pool without having to purchase an entirely new system.

ULTRAVIOLET SANITATION

Another interesting option, though it is one we have not seen firsthand for swimming, is



The Gypsy Hill Park pool in Staunton, Virginia.

ultraviolet (UV) light-based systems. These are the least popular option in the U.S., far behind chlorine and salt systems, though like natural pools somewhat common in Europe. UV is often used in conjunction with other filtration and disinfection approaches, especially salt.

UV works by emitting “a high-intensity germicidal light ray that alters or disrupts the DNA or RNA of targeted organisms such as algae, bacteria, viruses, cysts and protozoa. The highly-concentrated electromagnetic energy also destroys organic matter, eliminating the formation of dangerous chlorine by-products.” This technology has been used for drinking water for quite some time in the U.S., even in very large cities like New York. Thus it is a technology that is well-tested and used across the world, even if not applied regularly to swimming pools in the United States.

OPTIONS ABOUND

Numerous companies in the U.S. now make alternatives to chlorine-based systems. These will generally cost more than standard systems. Almost all the systems use similar principles but different metals and other components to achieve the desired results. Some use titanium, some use copper, some use silver, some use a mixture of the above or others. Since the materials involved vary, if you or a loved one has a

sensitivity or health issue related to a particular material, systems built around it are probably not appropriate for your situation.

Some also seek to minimize or mitigate the amount of chlorine necessary to maintain the pool, such as ozone generators, which can reduce chlorine use by 60-90 percent. For those with an existing pool that would be expensive or difficult to rebuild, such an approach seems more than reasonable. Adding UV or ozone can reduce chemical and chlorine usage by 80 percent or more when done properly.

Given the sheer number of systems and providers, it is best to do your homework on any company and gather independent reviews and references for their products, along with finding a qualified person to install the systems. Since the systems are not standard, some professionals may be unwilling or unable to install them, and may also be unhelpful if you run into problems.

A SHOCKING EXPERIENCE

Pool owners and users now even have non-chlorine shock options, such as a product called In The Swim Chlorine-Free Pool Shock. All of this is shockingly good news to parents like us, who look forward to more options both at home and when traveling to enjoy swimming in safe, clean, and lower or safer chemical water for our family. ☺☺

RESOURCES AND REFERENCES

- <http://www.spectralightuv.com/how-uv-works>
- <http://www.scientificamerican.com/article/nyc-uv-drinking-water-disinfection/>
- <http://ecosmarte.com/> and <http://ecosmarte.com/sciencsummary.html>
- http://www.nytimes.com/2008/05/29/garden/29pool.html?_r=0
- https://www.minneapolisparcs.org/activities__events/water_activities/webber_natural_swimming_pool/
- <http://minnesota.cbslocal.com/2015/07/10/nations-first-naturally-filtered-public-pool-set-to-open-in-north-minneapolis/>

WAPF on the WEB

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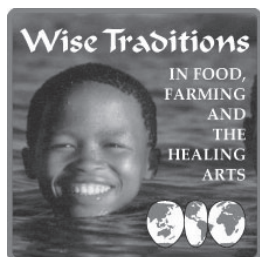
BLIP TV: westonaprice.blip.tv These are longer-format videos such as our press conference on the USDA Dietary Guidelines and Farmageddon panel discussions.

BLOGS: See blog posts by Chris Masterjohn, PhD, at westonaprice.org/blogs. And see our realmilk.com/blog and realmilk.com/testimonials where you can read and share raw milk testimonials.

ALEXA WEBSITE RATINGS: westonaprice.org is rated number one among alternative nutrition websites at alexa.com (see alexa.com/topsites/category/Top/Health/Nutrition). Please visit the Alexa site and post a comment about our website. You can help raise our rating by visiting our website frequently and linking to it from your own website, Facebook page or blog.

Wise Traditions Podcast Interviews

INTERVIEW WITH PHILIP WEEKS, MH, LAc



Hilda Labrada Gore: Philip Weeks is one of the leading natural health experts in the U.K. He is a master herbalist, registered acupuncturist and naturopath. He's studied a variety of approaches to wellness all around the world, and he has a real knack for communicating important health concepts in terms that are both easy to understand and easy to apply to our lives. I'm going to start right off the bat by challenging you. You've written a book entitled *Make Yourself Better*. That's a big claim in a title. What's the reality? How is this supposed to happen?

Philip Weeks: I mean that the body knows what it needs to do to get well but for that to happen we need to do basic things: we need to eat the right kinds of foods, we need to get the toxins out of our body, we need to live a certain lifestyle. My whole aim with what I do is to help patients empower themselves with their lifestyle and changes, in order to optimize the body's ability to repair itself.

HG: So what's step one? What's the first thing to do in order to improve your health?

PW: I begin by discussing constitution, because everybody's different. We all know people who can eat what they like, drink what they like, smoke what they like and they're really well, while other people have to eat pure food, have a perfect lifestyle, and even then they're only just okay. So fundamental in natural medicine is understanding that we're all different. I know that's obvious but in Western medicine that isn't necessarily seen as obvious. The first step to recovery or being at our optimum health is fundamentally knowing that we're different and there's different constitutional types and different medical systems around the world. There's different ways of understanding biotypes, dif-

ferent body frames, different outlooks on life, different ways that our bodies process different nutrients. And, of course, some of the most interesting advances recently involve testing our genetic and our SNPs (single nucleotide polymorphisms), how our genetics change according to our environment—whether genes turn on or off. That does not mean that genes are our destiny but they're very important for understanding what we need to do to be well. That's the first step: understanding ourselves more, what our constitutional health is, and then our lifestyle should be aligned with our body type.

HG: So, for example, when you talk about constitution, I have a friend who catches colds all the time. How she chooses to improve her health may be different than what I choose to do, right?

PW: Right. The first thing I discuss with patients is the fact that you can't compare yourself with somebody else. For example, I have a patient in her mid-seventies now, and she's incredible. She only needs five hours sleep at night, she's up in the morning, she does loads of things, she has loads of energy. But other people are not like that. Others may say, "I wish I was like her." But you're not going to be like her; you're just going to be yourself. The important thing is understanding your own body, the way that you work and then making the best out of what you have. As soon as we start comparing ourselves with other people and thinking we should be more like them, it's really a road to disease in many ways.

HG: Right, because actually, our attitude affects our health as well, correct?

PW: Yes, health depends on so many different

Hilda Labrada Gore, a mother of four, has been involved with WAPF for over ten years and is the chapter leader for Washington, DC. She went to Kenya last summer on behalf of WAPF. She is the director of communications for Body & Soul, a worldwide fitness organization. She also plays the guitar and is the contemporary music leader at National Presbyterian Church.

factors; it's not just our food and our lifestyle—it's also our beliefs and our emotions and our connections with people in the world and community—all these different things. All of these factors are very important for our wellbeing.

HG: If you have a bad relationship with your spouse, you feel that in your stomach, right? Your stomach is tied up in knots, you can't even enjoy your food and digest things properly.

PW: Our emotional wellbeing and our mental wellbeing aren't separate from our physical being. I test patients' cortisol levels, for example, to see the levels of stress they are under and how well their adrenal glands are functioning. We know that emotional stress affects the body biochemically in the blood in the same way that physiological stress does. The brain doesn't really recognize the difference so we are a very complex blend of our emotions, our spiritual wellbeing, our physical wellbeing—all of these things come together. I actually never wonder why people are ill; I only ever wonder why people are still well. With our environment, with our food, with all the challenges that we have, it's incredible how well people are, considering all those things.

HG: The resilience of the human body, right?

PW: It's extraordinary! Still, the first step is nourishment. What are we supposed to eat? I'm still finishing my master's degree in nutrition and I've done all kinds of different training

throughout my working life, but it's a confusing question, isn't it? We could be talking all day to so many different experts around the world about what we should eat, and we get different kinds of answers. The simple answer is that we need to eat food.

HG: Got it!

PW: It sounds obvious but that's not what's happening anymore. Much of what is classified as "food" isn't really food. The additives, the chemicals, the kinds of preservatives added—if you think about it, we really should only be eating food that we can make at home—food that our grandmothers, our grandfathers would have understood as food. You can't go into your kitchen and make margarine—you would need machinery and chemicals, it can't be done. Can we make textured soya protein at home? No you can't, so why should we be eating it? Without getting too complicated, the fundamental thing is we need to be eating simple food—that's stuff we can make at home, stuff we can prepare ourselves. That's the first level and then we can go into more detail about what kinds of fat should we be eating. There's a lot of debate about what kinds of fats we should be eating but, again, if you look at the foods of traditional cultures, they're eating saturated fat for sure, and they're eating a variety of fats. Many of the patients I see have become ill as a result of our lowfat food recommendations through the years.

HG: So why do conventional doctors continue to push lowfat?

PW: There's lots of reasons. The logic is that people who have heart disease tend to have furring of the arteries, hardening of the arteries, and some studies showed that heart disease is associated with high cholesterol. Then they analyzed food; foods high in cholesterol tend to be high in saturated fat also. Therefore, so the logic goes, saturated fat causes heart disease. So that's where it began and that myth is continuing. However, a high-saturated-fat-diet doesn't necessarily result in high cholesterol in the blood. In fact, some people are thinking that cholesterol is more related to inflammation—that if you have inflammation in the body, the

THE WISE TRADITIONS PODCAST IN 2016

We just wrapped up our first year of the Wise Traditions podcast and we could not be more pleased! As always, the mission of the Foundation is to educate, and the podcast was a tremendous tool to do just that. Here are a few of our accomplishments in year one:

- Fifty-six episodes published (one a week, and a few "bonus" episodes tossed in).
- Diverse topics covered including fertility, Wise Tradition diet basics, regenerative agriculture.
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body will be producing its own cholesterol in order to have an anti-inflammatory effect. Fat in itself is anti-inflammatory. However, our central adipose tissue—that's the fat around our belly—is associated with inflammation. We also know that a high-carbohydrate diet can increase triglycerides and cholesterol. The type of cholesterol in the body is also a factor. Oxidized cholesterol can contribute to the buildup of plaque, so people can have a low overall cholesterol count but if the cholesterol is oxidized it's more dangerous than having high cholesterol in your bloodstream.

HG: I actually have heard and read more studies coming out in the mainstream media that fat is no longer the culprit.

PW: It is encouraging but there's still this myth that you need to have lowfat foods. But the high-carbohydrate diet, especially a high-sugar diet, is much more of an enemy to us than saturated fat. And recently, there's been studies showing that heating up vegetable oil creates oxidation in the body which could be carcinogenic, so vegetable oils can cause more problems than saturated fats.

HG: The name "vegetable oil" makes them sound healthy.

PW: It sounds awesome. It's a vegetable, right? What can be wrong with vegetables? But this oil is not coming from vegetables, and how do they process it anyway? I recommend butter, I recommend saturated fat. I use a lot of ghee in my clinic. The colder the climate, the more saturated fat we need. The Inuits are eating a

diet that's incredibly high in fat—something like 70 percent of calories as fat—almost like a ketogenic diet. A diet so high in fat may not be so necessary in California. So there are some basic things: we need to eat food, we do need to have saturated fat, and we shouldn't be eating refined carbohydrates.

HG: As someone recently pointed out to me, preservatives are there to keep the food intact; but when we try to digest food, the object is to break it down and activate the nutrients, get them into your body, so the preservatives are fighting our body's digestive process. Right?

PW: Yes, processed, refined foods are not designed to be consumed. They're not designed to be consumed by bacteria, they're not designed to be consumed by fungi, they're not designed to be consumed by organic life—but then we're eating them. The ingredients in them aren't food. It's about going back to the basic principle of what we can make at home. Of course, then we can drill down into more detail, such as the issue with gluten. You know, gluten used to be a food for most people, but like many clinicians today, I'm seeing an increase in not just celiac disease but non-celiac gluten intolerance. For many people today, gluten is inflammatory, it aggravates neurological tissues. Anyone with an autoimmune disease, anyone with a neurological disease fundamentally needs to avoid gluten.

HG: What else should we do to make ourselves better?

PW: The next step involves detoxification. Our grandparents lived on a planet that was organic. It *was* organic but we're no longer on that planet; we live on a planet that is full of different chemicals and toxins. I do different kinds of blood tests—we even do fat biopsies—and we find all kinds of things. I've never come across a patient who doesn't have some kind of environmental poisoning, maybe very low levels but everyone has something. The most common things are plastics and phthalates—things like Bisphenol-A, which is a xenoestrogen added to plastic to make the bottles harder. These things affect our hormonal systems. I also find heavy metals, and lots of other things.

HG: No wonder you're in wonder that we're surviving—in spite of the toxins that your tests are finding in our bloodstreams.

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PW: Yes, and this explains why the kind of diseases that affected our grandparents in their old age are now affecting our children. Today we are seeing type 2 diabetes and even heart disease in children. We are aging earlier because we've got oxidative stress and environmental toxins. The body is wearing out at a young age.

HG: You were talking about the organic environment. It just made me think that people who live and work on farms seem healthier, perhaps it is in part because they're exposed to fewer toxins than city dwellers.

PW: Not necessarily. I have a practice in the countryside as well as in London, and I treat quite a lot of farmers who are now exposed to farm chemicals such as organophosphates; when I do blood work on them I find all kinds of pesticides and insecticides. I don't think there's any safe haven. I'm not being paranoid but I do go through periods of despair. I test these things and say, "My goodness. What do I do with this individual?" However, the body will detoxify itself but we need to encourage it, we need to give it the opportunity. There are lots of ways we can encourage the body to detoxify. For example, I'm a real advocate of intermittent fasting where on certain days of the week you reduce the amount of food you eat to change the

way your body is working. We do liver flushing, use herbs and cleanses and all kinds of things to try to get rid of these toxins.

HG: I teach fitness as a hobby, and we change up the exercises because if you don't, your body becomes accustomed to a certain movement and you're no longer challenging it and strengthening it in the same way. So I guess the intermittent fasting in a way surprises your body.

PW: It's the same thing, exactly. There's this idea of neuroplasticity; you have to have routine in some ways but you have to have variety as well. It's like walking home; if you're walking home from work, choose a different route every day, try to encourage neuroplasticity. This can help people with pain, for example, changing your routine, doing intermittent fasting, changing the way that you live—all this can be very helpful. There was a time when people didn't have to worry about detoxification; I think everyone has to worry about that now. Everybody has to do something every so often, and even ancient cultures all had something. They often did fasting; this is part of every culture in the world. It's not new.

HG: But honestly, when I hear "Try my seven-day detox," it seems like a scam to me. Why can't the body detoxify itself? You're not scamming me, are you?

PW: I'm not selling you anything, that's for sure. There was a time when the body could process the toxins it was exposed to. In fact, we have toxins that come from inside our body—urea and ammonia and all kinds of things that are normal waste-products; these are called "metabolic waste products" that are a natural part of what a human body produces, but now we're exposed to chemicals we've never been exposed to before. In the last one hundred years we have unleashed some eight thousand chemicals;

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some of them we've never been exposed to in the history of mankind.

HG: Our bodies need help!

PW: Yes, but it's not about buying products and supplements; I'm really not into that. Fundamentally, a lot of what we can do is through food, a lot of it we can do with sweating—I'm a real fan of using saunas or using exercise to get people to sweat. We know that works, we know that's one way of reducing toxins, the toxic load in the body. If we have excess weight we need to lose that excess weight, specifically the weight around our belly, the central adipose tissue. That is where our body stores a lot of these fat-soluble toxins. We often need to lose weight in order to get rid of some of those toxic metals and toxic chemicals that are stored in our fat cells.

HG: Otherwise, our bodies may become sicker with a chronic disease of some sort?

PW: Correct. What we're seeing is that we've replaced acute disease with chronic disease. We're good with acute disease; Western medicine is fantastic. If you have a car accident, there's microsurgery, there's incredible advancements that have occurred in modern medicine. But most of the health burden today comes with chronic disease. With acute disease, the whole design of treatment is more black and white. Do you have an infection or not? Is this working or not? That's all very well because there's a drug for this and there's a drug for that. With chronic disease, patients rarely have one isolated symptom. They may have eczema and psoriasis and headaches and migraines and irritable bowel and asthma. And what happens in Western medicine? They're giving a drug for every single symptom. So rather than prescribing a drug for every single symptom, why don't we look at what's occurring fundamentally? It might be that all of those symptoms are related to a single event that's going on in the body; it might be a nutritional deficiency, it might be an issue with the gut, it

might be an issue around lack of detoxification. Instead of throwing drugs at all these symptoms, we need to promote the body's natural ability to repair itself. For starters, most chronic disease is related to inflammation.

HG: I've heard that, and so, what does that mean? What's causing the inflammation?

PW: Often it comes from oxidative stress, the body struggling with the amount of free radicals it's dealing with, including environmental toxins and too much sugar. We know that a high sugar intake increases the amount of insulin, and high insulin can affect the immune system. There's something called the TH₁ and TH₂ balance which is part of the immune function. When that goes out of balance, the body can't resolve its inflammation any more and that creates all kinds of different conditions.

HG: Okay, after detoxification, is there another step?

PW: The next thing I talk about is "activation movement." We need to move. Now there could be debate about what kind of exercise is the best—is it high intensity, is it yoga, is it...? But fundamentally we all just need to move. There are lots of studies showing the ill-effects of sitting down all day. It's a real problem that people aren't moving enough, but good studies have shown that simply by walking for thirty

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Nina Teicholz, author of *The Big Fat Surprise*, episode #45

"Our first child was two years old. His behavior was horrific. We started to see that if I fed them real food, they wouldn't want to eat it at first. They didn't know what it was. Their taste buds didn't even recognize it. So, we grew a garden. Their taste buds would change over a two-week period. This is the 'Mandy protocol,' the real food recovery protocol."

Mandy Blume, author of *Real Food Recovery*, episode #42

minutes, three times a week has huge health benefits. I think people need to stretch and I've seen in ancient cultures they do that all in the morning, so exercise really should be done in the morning. There's good, sound reasons for that—that's when our peak cortisol occurs. We shouldn't have a peak of cortisol in the evening; we want to be exercising in the morning. I stayed with monks in a Shalu monastery in China and did all the training with them. We got up early, doing quite hard physical training, then you do your meditation, then you have breakfast and the day begins. Same in India, I saw that in the Himalayas. Yoga exercise takes place in the morning, and then you get on with your day. We just need to move. You cannot get well if you're not moving.

HG: And I've heard the best kind of movement is the kind that you're likely to do. In other words, don't force yourself to do something that you don't like. If you enjoy dancing, dance, right? If you enjoy walking, get a dog so you can get out—whatever it takes. You are saying that all cultures have some form of movement and that's the essential thing. It's not about which type you do.

PW: Well, they have movement but they don't have exercise. They do not do exercise. You never go to a tribe and find them going for a run in the morning. Living is exercise, isn't it?

HG That's excellent. Is there one more step?

PW: We talked about neuroplasticity and change, but at the same time, you also need a routine. This came to me when I was talking to some of my older patients who'd lived through the war. We talk today about being stressed but people had a lot of stress then—they had bombs raining down in London, so that was stress. What did they do? They had routine. Key to this is eating on time. You should eat breakfast at the same time every day, lunch is the same time every day, evening meal, go to bed at the same time every day. They should be routine and within that structure, there should be lots of variety.

HG: Interesting. And what's the benefit of routine?

PW: It stops our adrenals from getting burnt out, it stops us using up our reserves. Our whole body works on cycles. Obviously for women that's much more obvious with a monthly cycle but for everyone it involves circadian rhythms—the whole body works on rhythms so we have to work within the rhythms of our body. We can't have erratic lifestyles and be healthy. It's not going to happen, so we need variety but we also need stability and structure.

HG: Anything else?

PW: One of the most important principles is getting enough sleep. It's difficult to get enough sleep. We need a minimum of six hours; some people need eight hours. One of the things I kind of bang on and on about in my clinic is sleep hygiene, the importance of not having any lights in the room at night when you're sleeping. An interesting study found that profoundly blind women have half the rate of breast cancer as women who have vision. Half the rate. They think it's to do with melatonin; melatonin is essential for immune repair and for preventing all kinds of chronic diseases like cancer. So the way we get our melatonin, the peak melatonin, is at night and we need to be sleeping in an absolutely pitch black room—no little lights going in the background, no clocks, no TV. I mean we shouldn't have a TV anyway, but especially in the bedroom. The room we're sleeping in should be pitch black in order for us to get enough melatonin, but if we're using bright screens at night, it takes between one and three hours for the melatonin levels to become normalized. You can fall asleep but you're not having proper sleep.

HG: And also people seem to be having more and more sleep problems, right? And of course they want to pop another pill for that but your advice is sound. Now, does that make up the whole Wheel of Health then?

PW: One more thing: the emotional and spiritual connection. How do we connect with the greater world, how do we connect with that that's greater within us, how do we connect with communities? We know that obesity increases the likelihood of an early death by 20 percent, we know that poor air quality increases it by 5 percent, we also know that smoking and many things increase the risk of death, but the biggest risk that increases the likelihood of an early death by almost 40 percent, is loneliness and isolation. That is the biggest health risk that any of us can face.

Nutrition and lifestyle are important but it's connection that keeps us well, and there are many ways of making us connected. Social media is great on one level but can also make us more isolated. It is important to address how we deal with our emotional world, our connection with other people in our lives and also about how we deal with all of our difficult emotions. It's hard being human. We've got a right and a left brain. We can't out-think a lot of our problems; we have to feel them, we have to feel grief, anger, irritation and sadness. If we don't feel those emotions, how are we going to feel joy and connection and all the good emotions?


HG: And if you tamp them down you're going to create a little chaos.

PW: It's the beach ball effect, isn't it? You push a negative emotion under the water and then eventually it will come back out again. We need to be able to feel our emotions and we shouldn't be feeling happy all the time. It doesn't happen. You know if you look at our expectations of how we're supposed to feel, we can see that with how many drugs are prescribed, especially in America with serotonin reuptake inhibitors and other anti-depression medications. We read that one in nine people are on anti-depressants in America, is that possible? One in nine?

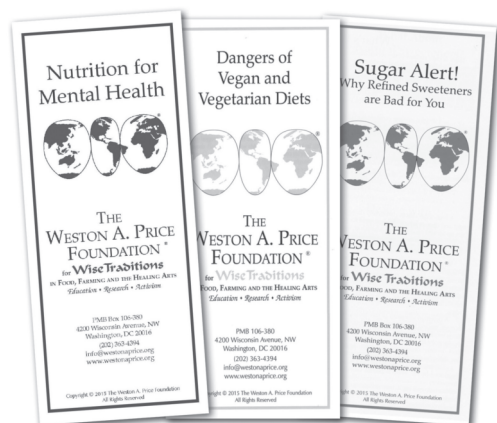
HG: Do you think they're just trying to maintain a level of happy emotion that isn't attainable?

PW: I think we're given a framework that's unrealistic. We're given unrealistic expectations that we buy into because a whole society buys into it; we need more help about creating communities and connection. On the other hand, there's certain things that need to happen for us to file away trauma. We all have traumatic things that happen to us, but some people find it more difficult to move on from those traumas than other people. One theory holds that REM sleep is very, very important for filing away trauma. We've got these virtual filing cabinets in our brain and we file things away, "Oh that's happened and it was terrible, but now I'm okay about it and I'm going to put it away over here." This only happens in REM sleep. Studies were done on soldiers from the Vietnam War who were still having flashbacks. Those who kept having flashbacks tended to have poor REM sleep. So the question is "How do we encourage REM sleep?" They tried medication, they tried all kinds of things but some of the most effective things are actually free. Dancing can improve REM sleep and help with trauma, as can looking at a fire. Just sitting around a fire can actually stimulate REM sleep. So if you think about tribes,

they dance around fires, they have community events when they've had war and famine and children have died. Maybe there's a connection between what our ancestors have done and what we can do now to help us cope with a world that essentially isn't working very well any longer.

HG: You've given us some practical ideas of things we can do to make ourselves better. Thank you for joining us today. 

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All Thumbs Book Reviews

The Art and Science of Grazing

by Sarah Flack

Chelsea Green

With the growing interest in moving animals back to their natural diets, especially pasture and other such feeds for ruminants like cows, the need for accessible educational resources continues to grow. Just take a drive around Kentucky, and one sees this first-hand—many farmers are trying to pasture-raise animals, with mixed results, including many doing damage instead of delight to their land. Pasture-based production models are not as simple as letting animals loose onto land.

Thus, books like *The Art and Science of Grazing* are both timely and terribly needed. The book describes the diverse healthy pastures the author wants farmers to pursue, moving between technical information about plant and pasture growth, on to an overview of how different species interact with pasture as a food source, and then case studies of farm management from across the country and across farm types (both beef and dairy herds, both farms with only a few animal types and farms mixing many animals in their systems), with beautiful pictures peppered throughout. The book also contains a fair number of informative and useful charts, covering a wide array of subjects to summarize or better explain concepts and content for the reader.

The first section covers plant and pasture growth basics. Whether a farmer or a foodie, this is a fascinating section. We have been raising beef for about five years, and still I learned a tremendous amount of useful information from these chapters. This book would make a great addition to a high school-level science or biology class because of the excellent information, organization and presentation.

The next section covers pasture-based animal systems from the eater's perspective, not yours or mine, but the animal's! It is a fasci-

nating exploration of the nutritional, social and seasonal variations involved in forage-based farming models. Of special interest are the many case studies and discussions focused solely on dairy farms and dairy animals and the unique challenges and needs these animals have.

The last two sections help with the design and management of the information presented in the previous two, giving farmers tools to implement the ideas regarding the many details that are involved in creating a sustainable, rotational grazing system. All thee little details—paddock sizes, portable water, pasture evaluation and more—are addressed, allowing the reader to formulate a plan to move towards pasture-based models or improve their current approach.

One of the few subjects I would have liked to see covered more thoroughly in this book is “tree hay,” which shows a great deal of promise for moving sustainable grazing practices to the next level in the United States. Only a few paragraphs are devoted to “browse” in the early chapter on grazing adapted plants. To some extent, this subject (and the skills involved) is probably many years away from reintroduction to the U.S. and its farms.

Perhaps most importantly, Flack points out at the beginning that “grass-based livestock systems are attractive to look at (and) they are beneficial to our environment and well-being.” The rest of the book shows this principle in action, on real-life farms in real-life places—improving soil (and thus sequestering carbon), producing healthy food, and protecting the environment from a host of maladies created by industrial agriculture. In a day when nations and states are considering taxing cow farts, it is important for eaters to realize that pasture-based animal models are ecologically, environmentally, and nutritionally superior. This book helps

Sarah Flack's book will help many farmers more successfully make the transition to holistic pasture management and pastured-raised animals. Two thumbs UP.

Review by John Moody



Of special interest are the many case studies and discussions focused solely on dairy farms and dairy animals and the unique challenges and needs these animals have.

All Thumbs Book Reviews



The Green Revolution Delusion:

A False Promise

Written and published

by Walt Davis & Tony Winslett

The term “green revolution” can be a little confusing because it sounds like it refers to a choice to use more environmentally friendly practices. In fact it has little to do with improving or protecting the environment and everything to do with increased production using hybrid grains that are smaller and easier to grow and harvest with chemical fertilizers and machinery.

The result has hardly been good for the environment as soil quality has deteriorated and millions of tons of that soil have dried up and blown into the ocean. The chemicals have saturated the environment and created dead zones in gulfs and oceans where those chemicals run off the land.

This book discusses that but concentrates even more on the devastating impact to human life, health, farms and communities. The industrial farming paradigm views the small farm as an inefficient pest. “Get big or get out” became the catchphrase in the 1970s. Productivity has increased considerably in the short run but soil resources are being steadily depleted.

The argument that we need industrial agriculture to feed the world may sound good now but when our soil has been completely devitalized, industrial agriculture won’t be feeding anybody.

Davis and Winslett bring up two of the more disturbing developments in the field of genetic engineering. A letter from Dr. Don Huber is reproduced near the beginning of the book detailing the discovery of a new pathogen that seems to be associated with Roundup Ready alfalfa, soy and other GM crops. This pathogen greatly impairs the fertility of both plant and animal species. It is rare for a single pathogen to be this broadly destructive.

The second development revolves around a genetically modified bacterium that converts cellulose into alcohol. In the lab it worked very well and just before it was to be released commercially a curious student decided to see what happened when it was put into greenhouse soil. It converted all organic matter to alcohol and killed everything. Nothing survived.

Had this little monster gotten out into nature, life as we know it might have come to an end. But for the curiosity of a student we might have witnessed one of the greatest catastrophes ever. But don’t worry. The biotech industry assures us this stuff is safe and nothing serious could go wrong.

Speaking of the absurd, common raw milk legislation around the country is exposed for the nonsense that it is. The standard excuse for most of the regulation is safety. Many states only allow raw milk sales from the farm. Apparently if raw milk is sold somewhere other than the farm it is dangerous. Other states don’t allow advertising because that would make the milk unsafe.

I do like the philosophy promoted in the book that we should make our decisions based on what is honorable, not what is legal. As bureaucrats, politicians and legislators become more corrupt, the gap between what is legal and what is honorable gets wider and wider.

The authors wrote this as a novel, not a non-fiction text. I am doubtful that the storyline is engaging enough to propel this novel to the bestseller list. For more serious scholars looking for information I wouldn’t expect them to turn to novels, so I’m a little baffled at such a strategy. There is a lot of good, non-fictitious information in the book, so I do give it a thumbs UP.

Review by Tim Boyd

I do like the philosophy promoted in the book that we should make our decisions based on what is honorable, not what is legal.

All Thumbs Book Reviews

Modified:

***GMOs and the Threat to Our Food,
Our Land, Our Future***
by Caitlin Shetterfly
G. P. Putnam's Sons

Around 90 percent of food seeds are owned by six companies. At least some of them, like Monsanto, are tinkering with the DNA of those seeds and using us to test how that is working. Many people, including the author of this book, have identified Genetically Modified Organisms (GMOs) as the cause of a variety of health problems.

Whether GMOs are dangerous or not is a hotly debated issue, so after being diagnosed with a sensitivity to GMOs, Caitlin Shetterfly travelled to several locations around the United States and Europe to talk to activists and experts on both sides of the debate. Many crops, like soy, are modified to tolerate glyphosate, the active ingredient in Monsanto's Roundup herbicide. Of course that means many genetically modified crops are doused in that chemical, among others. That could make it difficult to distinguish whether health problems are caused by glyphosate or genetic modification.

Some of the people Shetterfly contacted seem like really nice people. One example was Zach, the friendly GMO farmer with a young family, who seemed to genuinely believe we need GMOs to feed the world. Others were not so nice but seemed equally convinced. One proponent of GMOs had an interesting answer when asked why he supported them so strongly when he no longer worked for the industry. His answer was that it was kind of like a religion. That would explain some of the hotness on that side of the issue.

In Europe, Shetterfly focused mostly on the controversy over honeybees and how GMOs endanger the pure honey that Europeans love. Europe is less receptive to GMOs in general but is facing tremendous pressure from U.S.

industry to accept them anyway.

Modified is more of a travelogue than an information-dense text, so there is a lot of detail about what the author sees and thinks about while traveling. She tends to ask more questions than she answers but it is clear that she sees the dangers of playing with DNA. She also sees the obvious conflict of interest when, for all practical purposes, the industry is allowed to regulate itself. She mentions that the FDA holds to the idea that GMO crops are substantially equivalent to their natural counterparts. Many don't seem to think conflict of interest is a serious concern. Shetterfly interviewed someone who was certain the industry would never lie to the FDA or government agencies in general because that is a serious crime.

If I pick a blade of grass from my yard and take it to the patent office, they will not give me a patent for it because it is just a natural blade of grass—at least I hope it is. Monsanto and other chemical companies have patented their Franken-seeds and food products because they have convinced the patent office that those products are substantially different from nature. Then they convinced the FDA that serious regulation is not needed because they are substantially the same as nature. To me this is a key point. Both of these statements can't be true. One is a lie.

Monsanto has also waged war on seed savers as documented in the film *Food, Inc.* Saving seed has been critically important in farming as long as we have been farming. Someone has to do that or agriculture as we know it ends next year. Industry is in the process of effectively making that illegal. It amazes me that they can do that without confrontation by angry mobs fully equipped with pitchforks and torches.

There is hope that people are starting to wake up to this issue. Even Zach, the friendly GMO farmer, started shopping at Whole Foods. Not the perfect solution but it's a start. Maybe someday he can grow food he would actually eat. The thumb is UP.

Review by Tim Boyd



Europe is less receptive to GMOs in general but is facing tremendous pressure from U.S. industry to accept them anyway.

All Thumbs Book Reviews



Human Heart, Cosmic Heart

Thomas S. Cowan, MD

Chelsea Green

Tom Cowan is a student of the esoteric philosopher Rudolf Steiner, and since his first introduction to Steiner's work, Tom has been haunted by one of Steiner's statements: that in order for mankind to make spiritual progress in the physical world, he must realize that the heart is not a pump. What a strange statement! Everyone knows that the heart is a pump! And why would it make such a difference to the spiritual evolution of mankind if the heart were not a pump?

Tom's early lectures on the subject—presented at our *Wise Traditions* conference and elsewhere—were spellbinding. He soon had us convinced that the heart is, indeed, not a pump. A pump makes a slow-moving liquid move faster, but the blood is rushing at full speed when it reaches the heart. Rather, the heart functions in part as a hydraulic ram, a device that uses the force of moving water to vector that water to places where it is needed—in the case of the heart, some of the blood is shunted to the head, while the rest moves out into the arteries.

As the blood begins its circulation throughout the body, it slows down, and when it reaches the tiny capillaries, so small that only one blood cell can pass through at a time, the movement of the blood actually comes to a stop. Each blood cell then oscillates slightly before it begins its journey back to the heart, moving faster and faster—in effect defying the forces of gravity as it moves up the arms, legs and torso to reach the midpoint of the body.

One thing Tom had not figured out in those early lectures is just what causes the blood to accelerate in the venules and veins as it journeys back to the heart. Now Tom has an explanation—but you'll have to read the book to find out what it is! Here's a hint: he figured it out when

listening to Gerald Pollack discuss the properties of water at a *Wise Traditions* conference.

And why is it so important to understand that the heart is not a pump? The notion that the heart is merely a pump derives from the modern, materialistic view that we live in a clockwork universe, and that life is a kind of mechanism, or a bunch of mechanisms put together, much like a car is a bunch of mechanisms put together. But as Tom shows in his book, the heart is a cosmic organism that is tied to the mysteries of the universe in its geometry and rhythms; one of its many roles is to sense what is in the blood and communicate to the rest of the body what is needed. More than the brain, the heart is a repository of our interests, talents and relationships—as evidenced by the many examples of heart transplant patients taking on the personality of their donor.

Properly understood, the heart provides a model for human government, one in which the government listens to the people, the way the heart listens to the blood, a model for human society governed from the people up, not from the government down.

And finally, a better understanding of the heart's role in the body lends itself to a gentler type of medical practice, one that strengthens the heart with medicinal herbs and satisfying diets, rather than slices open the chest with a circular saw, prescribes poisonous medicines or dictates soulless lowfat foods. As Ben Greenfield says, "If you have a heart and want to live a long time, you must, must read this book."

Review by Sally Fallon Morell

One thing Tom had not figured out in those early lectures is just what causes the blood to accelerate in the venules and veins as it journeys back to the heart.

All Thumbs Book Reviews

Nourishing Fats: Why We Need Animal Fats for Health and Happiness

**By Sally Fallon Morell
Grand Central Life & Style**

We have been hearing about how unhealthy saturated animal fat is for most of our lives. It causes heart disease. It causes cancer. It makes you fat. It does this and it does that. It might even cause global warming. Sally Fallon Morell has gone in search of the evidence behind these claims and found, well, nothing. As with all popular superstitions, there is no evidence, only grandiose claims by authorities based on nothing but their authority.

Popular wisdom would have us believe that saturated fats like butter cause heart disease and heart disease rates have skyrocketed over the last century because we eat too much butter. According to the USDA and the U.S. Census Bureau we ate about 20 pounds of butter per capita a hundred years ago. In recent years that number is less than 6 pounds per capita. If cutting back on butter is the answer, we've done that and things have only gotten worse. Sally also gives us a peek at the Baptist Ladies' Cook Book from 1895 which is loaded with recipes dripping with cream, butter, eggs and lard.

What about the famous Framingham study? According to Dr. William Castelli that study showed that people who ate more fat and cholesterol were more active and they weighed less. There was no correlation with heart disease. Numerous other large studies are cited in this book that come to the same conclusion.

Cholesterol is the other terror of the pop health culture. Again it is a little hard to find a good study to justify this terror. Studies that seem to support the idea that fat and cholesterol will kill you are flawed in key ways. One very common problem is that these studies do not differentiate between natural animal fat and artificial trans fat. Another common deception

is to make statistically insignificant variations look large and convincing. One more mistake is the assumption that high levels of fat in the blood imply high fat intake. High carbohydrate intake can lead to synthesis of fatty acids from excess carbohydrates.

It gets worse. Not only do we lack evidence of harm from fat and cholesterol but there are many studies that show we need both of them to stay healthy. One study showed children on low-cholesterol diets had a lower IQ. People with Smith-Lemli-Opitz Syndrome have a genetic disorder that prevents them from making cholesterol. Cholesterol supplements greatly improve their symptoms. Mental illness is epidemic today in the population in general. That is not surprising when you understand that fat and cholesterol are two of the most critical nutrients for the brain. Yet everyone is afraid to eat them. It reminds me of the old Johnny Carson quip about the guy who gave up alcohol, women and rich foods. He was healthy right up to the day he killed himself.

This book will not wear you out with technical terms but there are technical explanations and terms for those who like that. You can read about the beneficial constituents of butter, which include cholesterol, lecithin, selenium and glycosphingolipids. Glycosphingolipids illustrate perfectly why science nerds should not be allowed to name anything. I can only imagine what they are naming their kids.

Anyway, moving on before I really get in trouble. Apparently the cognitive dissonance on saturated animal fat is getting uncomfortable enough that we are seeing headlines in publications like the *Washington Post* and *Wall Street Journal* admitting that butter may not be so bad after all. If you have been on the lowfat bandwagon and your diet is depressing you, reading this book and trying the recipes in the back will make you happy again. My thumb is UP for that.

Review by Tim Boyd



We have been hearing about how unhealthy saturated animal fat is for most of our lives.

SOME SHORT REVIEWS OF THUMBS UP BOOKS

EAT TO ENERGIZE by Leah E. McCullough: Maybe this book should have the subtitle, “The Liver Book.” Leah McCullough, “the Fibro Lady” cured herself of chronic fatigue by eating nature's number-one superfood: liver. She describes a key study in which rats given liver had greatly-increased stamina, and then provides a host of recipes for preparing this traditional sacred food.

PUT YOUR MONEY WHERE YOUR MOUTH IS! by Stephanie Selene Anderson: This guide to healthy food shopping, now revised and expanded, helps you get started in your journey to health. This WAPF-friendly book makes a good companion to our Shopping Guide.

MINDFUL DENTAL CONSUMER by John Percival, DDS, MSc: A thorough discussion of all those decisions you need to make before the dentist drills. It covers common procedures such as fillings, inlays, crowns, bridges, veneers, dentures, implants and root canals, and discusses financial considerations as well.

HOW TO STOP CAVITIES by Judene Benoit, DDS: We all know about Dr. Price's protocol for healing cavities, namely cod liver oil and high-vitamin butter oil. Benoit presents a more nuanced approach that looks at other important nutrients, and even explores the role of stress as a cause of dental decay.

CONQUERING CANCER by Nicholas J. Gonzalez, MD: Conventional oncology delivers a verdict of pancreatic cancer as the onset of doom—pancreatic cancer patients rarely survive one year after diagnosis. Breast cancer patients tend to survive longer, but often succumb after many months of debilitating treatment. The late beloved Nicholas Gonzalez, MD, got true lasting results with these cancers—even to the point of cure. Based on the pioneering research of Dr. John Beard, his protocol uses proteolytic enzymes, diet and detoxification with impressive success. *Conquering Cancer* provides a roadmap for doctors and patients who want something other than chemotherapy and radiation.

REAL FOOD RECOVERY by Mandy Blume, BSc, NTP: The effervescent Blume describes the healing diet she has used with foster children, including recipes these children will actually eat!

WILD FERMENTATION, Updated and revised edition by Sandor Elix Katz: A beautiful revision of Katz's groundbreaking tome on fermented foods, the new version is an easier read, and contains two of my favorite examples of indigenous fermented brews: *gv-no-he-nv*, the Cherokee sour corn drink, and *chichi*, Andean chewed-corn beer. In fact, Katz provides lots of interesting recipes for hooch!

BOOK REVIEWS IN **Wise Traditions**

The Weston A. Price Foundation receives two or three books *per week*, all of course seeking a Thumbs Up review. What are the criteria we use for choosing a book to review, and for giving a Thumbs Up?

- First and foremost, we are looking for books that add to the WAPF message. Dietary advice should incorporate the WAPF guidelines while adding new insights, new discoveries and/or new therapies.
- We are especially interested in books on the fat-soluble vitamins, traditional food preparation methods and healing protocols based on the WAPF dietary principles.
- We look for consistency. If you talk about toxins in vaccines in one part of your book, but say you are not against vaccines in another part of your book, or praise fat in your text but include recipes featuring lean meat, we are unlikely to review it.
- We do not like to give Thumbs Down reviews. If we do not agree with the major tenets expounded in a book sent to us, we will just not review it. However, we feel that we have an obligation to point out the problems in influential or bestselling books that are peddling misinformation, and for these we will give a negative review. We also will give a negative review to a book that misrepresents the findings of Weston A. Price.
- If you want us to review your book, please do not send it as an email attachment. Have the courtesy to send us a hard copy book or a print-out of your ebook or manuscript in a coil binding.

BACK ISSUES OF **Wise Traditions** AND OTHER INFORMATIVE LITERATURE

Fall 2010	Essential Fatty Acids; Magnesium; Healthy Skin; Sacred Foods for Children; Tale of Two Calves.
Winter 2010	Joel Salatin on the Politics of Food; Saving the Polish Countryside; Biological Farming; Glutathione in Raw Milk.
Summer 2011	Sulfur Deficiency; The Importance of Salt; The Senomyx Scandal; Why We Crave; Raw Milk Safety.
Fall 2011	Pork - Live Blood Analysis Study; Pork Recipes; The Accumulated Wisdom of Primitive People; Protein Primer.
Fall 2012	Vitamin & Mineral Synergies; California's Ancient Cornucopia; All About Bacon; Tooth Decay.
Winter 2012	Vitamin A Synergies; The Story of Zinc; Natural Skin Cream; Slovenian Soups and Stews; Soy Infant Formula.
Spring 2013	Nutritional Roots of Violence; Glycine for Mental Stability; Pork Study; Homeopathy for Mental Illness.
Summer 2013	Our Broken Food Supply; The Marketing of Crisco; GMOs in Europe; Insights of a Meat Processor; Natto.
Fall 2013	GMO Dangers; Roundup Dangers: Culinary Traditions in Romania; The Battle for the People's Milk.
Winter 2013	Beyond Cholesterol; Cancer as a Healing Strategy; Grain Traditions in Russia; Push to Pasteurize Breast Milk.
Spring 2014	Dr. Price's Scientific Approach; Weston Price and the Fluoridationists; Cows and Climate; Economics of Raw Milk.
Summer 2014	Nutrition for the Elderly; A New Look at Alzheimer's Disease; In Defense of Wheat; Dangers of Vegetable Oils.
Fall 2014	What Causes Heart Attacks? The Myogenic Theory of Heart Disease; Thrombi in Heart Disease;
Winter 2014	Effects of Smart Phones on the Blood; Dangers of Smart Meters; Protection Against EMR; U.S. Dietary Guidelines.
Spring 2015	Cleansing Myths and Dangers; Toxicity and Chronic Illness; Gentle Detoxification; Great Nutrition Pioneers.
Summer 2015	Vaccination Dangers Issue
Fall 2015	The Scandal of Infant Formula; Vitamin D in Cod Liver Oil; Cod Liver Oil Controversy; Fermented Fish Foods
Winter 2015	Water Issue: The Fourth Phase of Water; Sewage in a Glass; Water Stressors; Teaching WAPF to College Students
Spring 2016	Folic Acid and Glyphosate; Why We Need Saturated Fats; Cod Liver Oil Testing; Flint, Michigan Cautionary Tale
Summer 2016	Vitamin A; Healthy Fertility; Recovery from the Pill; The Concussion Epidemic; EMR and the ADHD Child
Fall 2016	Why We Need Carbs; Recovery from a Low-Carb Diet; Sugar Addiction; Salt Update; Nutritional Yeast

All articles from all journals are posted at westonaprice.org.

Back issues are \$12 (includes shipping & handling).

HEALTHY BABY ISSUE: Traditional Remedies for Childhood Illness; Baby Food and Formula; Vitamins for Fetal Development; Wrong Advice in Baby Books; Vaccinations; Baby Food; Gut and Psychology Syndrome.

HEART DISEASE ISSUE: What Causes Heart Disease? Benefits of High Cholesterol; Oiling of America and more.

Special issues are \$12 (includes shipping & handling).

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PRINCIPLES OF HEALTHY DIETS 28-page booklet in English, French and Spanish

\$1 each (includes shipping & handling), 60 cents each for 100 or more.

2017 SHOPPING GUIDE 89-page booklet listing 2,000 products in categories: *Best, Good, Avoid*

\$3 each (includes shipping and handling) \$2 each for 10 or more; \$1 each for 50 or more.

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Myths & Truths About Cholesterol

Real Milk

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Vaccine Legislative Update

By Kendall Nelson

We can take comfort in knowing we defeated many of the more than one hundred bills introduced last year.

This year has proven to be a busy one regarding vaccine advocacy at the Weston A. Price Foundation. We work hard to bring you information about the many bills that continue to threaten vaccine exemptions for children and infringe upon the rights of health care workers. We also work to defeat bills that support vaccine registries, attempt to add additional vaccines to already crowded schedules, and give over-reaching powers to health authorities. WAPF action alerts go out to members in states where legislation threatens personal rights.

In doing so, we depend on you to participate in grassroots responses to federal and state vaccine-related legislation. It is your activism that makes a difference and we want to say thank you to all of our chapter leaders and members, because your actions did wonders in several states in 2016.

VICTORIES

Not one of the nine state bills proposing to restrict or eliminate vaccine exemptions succeeded last year and now due to pressure

and education from concerned citizens, Rep. Karilyn Brown from Arkansas has announced she will withdraw her bill H.B 1043 that would have eliminated personal belief and religious exemptions as well as adding rotavirus vaccine to the schedule.

A major victory was won in Virginia as the public persuaded the Joint Health Care Commission (JCHC) to vote “take no action” regarding their recommendation on the removal of religious exemptions and restrictions on medical exemptions. Thanks to your efforts, almost seven hundred people submitted public comment to the JCHC requesting “take no action” and over five hundred citizens showed up at the August 3rd meeting wearing red to let the JCHC know their position.

CONCERNS

While we can take comfort in knowing we defeated many of the more than one hundred bills introduced last year, we must continue our efforts to *stop* these horrendous violations of bodily autonomy and health freedom.

WAPF POLICY ON VACCINES

The Weston A. Price Foundation has received emails or letters from about one dozen individuals objecting to the strong stance we have taken against vaccines. We respectfully request that these individuals use the same lens through which they view mainstream nutritional advice, watch the films we recommend and read the research we present. Moreover, please understand that no vaccinated-versus-unvaccinated study has ever been conducted, that federal law recognizes that vaccines injure and kill, that a federal program has paid out over three billion dollars to vaccine victims, and that those who manufacture and administer vaccines bear zero liability for them. Vaccines injure and kill far more people than governments and health authorities openly admit, but no one can tell you in advance what kind of injury you or your child might suffer.

Your children are depending on you to make the right decisions for them and to do your research on any medical procedure before giving your consent. Of course you need to protect them from illness, but the best way to do this is with our dietary principles, and not with vaccines containing a host of harmful ingredients. Once these ingredients go into the bloodstream of your child, you cannot take them out.

We encourage you to watch *The Greater Good* as well as the new movie *Vaxxed: From Cover Up to Catastrophe*, which documents fraud and cover up at the U.S. Centers for Disease Control and Prevention regarding the vaccine-autism link. Parents of vaccine-injured children—who will be taking care of these children throughout adulthood—will tell you that no vaccine is worth the risk.

Sadly, we've experienced some terrible losses, like religious and philosophical exemptions in California under SB277 signed by Governor Brown on June 30, 2015 and put into effect July 1, 2016.

We are also concerned about the passage of the 21st Century Cures Act, which seriously compromises the integrity of the Federal Food and Drug Administration (FDA) drug and vaccine licensing process.

One thing is for sure, the fight is guaranteed to be extremely tough in 2017 and we must be ready. We are already seeing a number of bills introduced to eliminate or restrict vaccine exemptions. One state to watch is Texas with seven new bills: SB241, SB54, HB243, HB126, HB120, HB107 and HB97. These bills range from mandating counseling for conscientious belief and religious exemptions, to removing current consent protections regarding the vaccine registry, to requiring the health department to produce an annual report on HPV vaccine statistics for every Texas county, to eliminating parental consent for HPV vaccines.

Another important battle in 2017 will take place in California as Senator Pan is back at it again as the pharmaceutical industry's puppet with a new bill that is an assault on parental rights. Presented in the name of protecting children, SB18, Pan's "Bill of Rights for Children and Youth in California" is a monolithic CDC-Big Pharma power grab that declares all children have the "right to appropriate, quality health care," that is,

the state decides what's in the best interest of your child. We can be sure that will include being fully compliant with CDC regulations.




Del Bigtree (center), producer of the movie *Vaxxed*, with brothmaker Chef Lance Roll and Beth Lambert, author of *A Compromised Generation*. Bigtree and Lambert were speakers at *Wise Traditions* 2016.

WAPF AT WORK

Protecting the right to informed consent is of utmost importance. We will continue to bring you Urgent Action Alerts and we encourage you to join us as we work together to make a difference both on a national and state level. Remember, vaccine exemption laws are state laws, so it's important you fight for your state. Your phone calls, emails,

letters, meetings with legislators, and physical appearances at important hearings make all the difference.

Together we can work to safeguard vaccine exemptions, prevent poor rules and regulations regarding vaccine policy, and continue to have a positive impact on protecting rights to make informed vaccine choices for our families and ourselves. 

BILLS TO WATCH IN 2017

Below are listed some of the bills we suggest you keep an eye on. We will be sending action alerts to WAPF members in the various states as needed:

- California: A.B 2150, H.B. 18
- Massachusetts: H.1917, S.317, H.1981, S.2074
- Michigan: S.B. 1039, S.B. 1040, S.B. 260, S.B. 259, S.B. 261, H.B. 5126, H.B. 5127, H. B. 5361, H.B. 5362, H. B. 5363, H.B. 5364, H. B. 5365, H.B. 5361
- Missouri: S.B. 117
- Montana: L.C. 488
- New Jersey: A169, A520, A4009, A3968/S2332, A2647, A2727, A1810, S.B. 801
- New York: A9055/S6794, S117A, S378A, A8633, A7046/S3900, S3899, A7016/S4733, S509A/A1822, S2712/A1528, S3898
- Rhode Island: H.B. 7899, S2292, S2295, H7476, H7475
- Virginia: H.B. 209
- Ohio: H.B. 564, H.B. 170
- Texas: S.B 241, S.B 54, H.B 243, H.B 126, H.B. 120, H.B. 107, H.B. 97

Legislative Updates

POLICY UPDATE

By Judith McGeary, Esq.

As 2017 nears, advocates are gearing up for the new session in Congress and state legislatures nationwide. At the state level, work continues on bills to expand access to raw milk, foods produced in home kitchens and more. At the federal level, I anticipate the return of the PRIME Act, to improve access to small-scale meat processing, and potentially other initiatives to reduce the regulatory burdens on farmers producing nutrient-dense foods.

Trying to change decades of bad food policy in this country can feel like a hopeless exercise at times. Without minimizing the challenges—including the fact that it will most likely take another decade or more of dedicated, strategic organizing to achieve lasting change—it's important to celebrate the victories. There were two significant wins in the last quarter, both of which show the power of grassroots organizing. At the federal level, the death of the Trans Pacific Partnership trade agreement was the culmination of six years of work by millions of people. In Texas, a shorter fight over the rights of raw milk consumers and their agents shows both the impact of individual bureaucrats, and the ability of a grassroots movement to be effective regardless of one individual's agenda.

THE DEATH OF THE TPP

In the last issue of *Wise Traditions*, I wrote that “the Trans-Pacific Partnership (TPP) is showing signs of being on life support.” Nonetheless, I warned that the lame duck session could prove dangerous, since many members of Congress would no longer fear the voters' retribution. But the fight was ours to lose, thanks to a broad coalition of family farm and local food proponents, progressive groups and tea partiers, advocates for labor, the environment, and national sovereignty, and more, who had convinced both progressive Democrats and

libertarian-leaning Republicans to oppose the deal.

It is important to realize that opposing the TPP is not equivalent to opposing international trade in general. The TPP and trade agreements like it go far beyond addressing trade barriers such as tariffs and quotas, and instead effectively create the laws under which the people of every participating nation will live. Food, banking, medicine, internet access: the laws governing the standards for these and much more would have been subject to attack as trade barriers. The so-called “investor state dispute settlement” (ISDS) provisions put corporations on an equal, if not preferential, footing with sovereign countries. National, state and local laws could have all been challenged by foreign companies simply for reducing their expected profits, in lawsuits brought in an unaccountable international tribunal, under rules that did not comply with the fundamental principles of due process.

Remember Country of Origin Labeling? While many WAPF consumers know which farm their food comes from, average Americans rarely even know which country is the source of their produce and meat. Years of work by both farm and consumer advocates led to the adoption of Country of Origin Labeling in the 2008 Farm Bill, only to be challenged by Canada and Mexico as an illegal trade barrier. While U.S. courts ruled that COOL was legal, the World Trade Organization ruled that telling consumers where their food comes from is a trade barrier. Congress quickly caved and repealed the law. The loss of COOL is just one example of how our laws have been overridden by trade agreements, even absent the threat of lawsuits from private corporations under the sort of ISDS provisions contained in the TPP.

The grassroots opposition to the TPP

Judith McGeary is the Austin, Texas, chapter leader, an attorney and small farmer, and the executive director of the Farm and Ranch Freedom Alliance. She has a B.S. in biology from Stanford University and a J.D. from the University of Texas at Austin. She and her husband run a small grass-based farm with sheep, cattle, horses, and poultry. For more information go to farmandranchfreedom.org or call (254) 697-2661.

started even before the ISDS provisions became public knowledge. Indeed, the secretive nature of the TPP negotiations, which allowed major corporations to provide input but kept the public in the dark, helped trigger protests from a wide range of advocates for small farmers, labor, consumers and other movements in the summer of 2010.

For five years, millions of people in this country and in other TPP nations fought against this corporate power grab. Leaked documents helped fuel the concerns—concerns that were amply justified when the text finally became public in late 2015.

Despite the public opposition, President Obama concluded negotiations and signed the TPP early this year. But the opposition kept the agreement from being sent to Congress for approval. Even the President admitted that he could not garner the votes for it, except perhaps after Election Day, when members of Congress might assume their constituents had short attention spans and would no longer care.

The grassroots outcry against the TPP was so great that even Clinton, who had once called the TPP the “gold standard” for trade agreements, was pushed to oppose it during the campaign. Trump was extremely outspoken in his opposition to the TPP, and his election helped put the nail in the coffin that the grassroots had built. Shortly after the election, Obama and his Congressional allies abandoned plans to seek a vote in the lame duck session.

“People power” beat the combined forces of K Street, Wall Street, agribusiness, big oil and more.

While this is a very important victory, the war is not over. Many of those who pushed for the TPP—corporations, elected officials and lobbyists—remain in positions of power and influence, both in Congress and in the incoming administration’s transition team. The next step is to support true fair trade policies that provide economic opportunity and respect our sovereignty, including in how we feed ourselves.

TEXAS RAW MILK VICTORY

Under Texas law, a dairy can become licensed to sell raw milk directly to consumers. But despite stringent inspection and testing

standards, sales are limited to on-farm only. For several sessions, WAPF has worked with the Farm and Ranch Freedom Alliance and other organizations to amend this law to allow farmers to deliver raw milk and sell at farmers markets. Over the past several sessions, we have made significant progress toward passing the new bill.

In the meantime, however, consumers have worked together to reduce the burden imposed by the regulations; they have formed groups, and either a member of the group drives to the farm to pick up everyone’s milk, or they hire a courier to pick it up for them. In either case, the sale still occurs on the farm, with the group’s representative acting as an agent for each person, legally “standing in their shoes.”

These group arrangements have existed since at least 2005. For several years, the Department of State Health Services (DSHS) contended that they were illegal, but took no action to shut them down. Whenever the topic arose, we pointed out that consumers did not somehow lose their normal legal rights just because they drank raw milk; a person can designate an agent to do anything the individual legally could do, and picking up raw milk is no different.

Finally, in 2013, DSHS confirmed in writing that consumers could work together to pick up and distribute their milk.

Over the course of this summer, however, raw milk consumers in Texas were faced with three inspections of private drop points—not the farm, but the location where consumers have chosen to gather to pick up milk from an agent that they had hired. And twice these raids involved law enforcement. If allowed to stand, this change in policy would have created a seriously chilling effect on raw milk farms in Texas and deprived many consumers of access to this healthy food.

Why the sudden change, after over a decade of no enforcement actions and three years of agreed-upon policy?

Between meetings with officials and an Open Records Act Request, I pieced together the following facts:

- In the fall of 2015, the agency staff started work on a set of proposed changes to the existing raw milk regulations. While they still

The next step is to support true fair trade policies that provide economic opportunity and respect our sovereignty, including in how we feed ourselves.

would not have allowed sales at farmers markets, the new regulations would have explicitly allowed farmers to deliver their milk, as well as recognized small-scale cow- and goat-shares as legal. While not as broad as the bill we have been working on, the draft regulations would have been a very significant improvement over the current law.

- Then a new DSHS commissioner was appointed. When Commissioner John Hellerstedt started in January, he put an immediate halt to discussions of the draft regulations. Based on his personal view that raw milk should not be legal, he reversed all the work that had been done.
- The same staff who had seen the need to change the regulations quickly shifted into a “go get ‘em” mentality, aggressively seeking ways to bust raw milk producers—even when the delivery was being done by the customers’ agent rather than the farmer.

An individual in a position of power had spoken and was able to use the power of a large bureaucracy to implement his personal perspective. But while that is how the system sometimes works, it’s not the end of the story when people are willing to get involved. Outraged consumers called their state legislators, and a dozen legislators joined Representative Dan Flynn in a letter to Executive Commissioner Charles Smith of

Texas Health and Human Services, which has authority over DSHS.

After looking into the matter, Commissioner Smith responded with a pledge that DSHS would take no further actions against raw milk consumers or their couriers.

The issues aren’t completely settled yet. There is still a pending misdemeanor charge against one courier brought by the Harris County Health Department, with a jury trial scheduled for December 14. Since it’s a local matter, the state agency’s position doesn’t moot the case, but it should help the courier’s case.

The incident shows how one person, in a position of power, can cause significant problems. It also shows, however, that we can and must work to enforce the fundamental tenet that we are a government of laws, not of men. On November 14, the raw milk bill—which would allow the farmers themselves to deliver, as well as sell at farmers markets—was filed yet again. It’s time to organize and pass this bill, not only to defend the current level of access to raw milk, but to expand it. ☯☯

SOME OF THE MANY VENDORS AND DONORS AT WISE TRADITIONS 2016



Ghee from Pure Indian Foods



Crispy nuts from Dr. Linda's



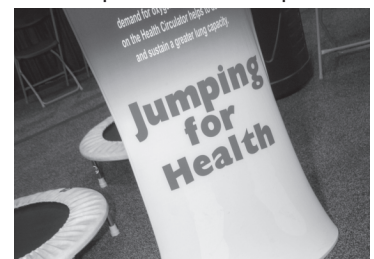
Pastured products from Epic



Cod liver oil from Green Pasture



Pure water using Radiant Life filters



Rebounders from Jumping for Health



Kombucha from Buchi



Magnetico sleep pads



Sprouted flour from To Your Health

A Campaign for *Real Milk*

RAW MILK SAFETY: A SUMMARY

By Sally Fallon Morell

Ever since the proponents for pasteurization began their campaign against raw milk—and this dates back to the 1940s—their main argument has been the safest argument. Raw milk is “inherently dangerous,” they claim. Or as the early articles proclaimed: “Raw milk can kill.” The latest example of this rhetoric comes from a 2014 study out of Johns Hopkins, which concluded that “the relative risk of individual illness is almost 150 times greater per unit of nonpasteurized dairy product, compared to pasteurized.”

THE 2014 JOHNS HOPKINS STUDY

As reported in the Fall, 2016 issue of *Wise Traditions*, WAPF published a critique of this conclusion in 2015.¹ The claim is derived from an analysis published by Langer and colleagues in 2012, which actually found no statistical difference in the rate of illness (as opposed to the number of “outbreaks”) attributed to raw milk or products produced from raw milk compared to those produced from pasteurized milk. In addition, the Langer analysis limited its time frame to the years between 1993 and 2006. By selecting such a narrow time period, the data excluded the nation’s largest outbreak of salmonella: in 1985, a multi-state outbreak of salmonella that was traced to pasteurized

milk from a Chicago milk plant. This resulted in over sixteen thousand confirmed cases, and the investigators estimated that between 150,000 and 200,000 people were sickened.

Our own analysis of illnesses attributable to raw and pasteurized milk over the years 1980 to 2005 indicates almost eleven times more illnesses attributed to pasteurized milk than to raw milk. Using the estimate that one percent of the milk is consumed raw, we can calculate that on a per-serving basis, raw milk is less than twice as dangerous as pasteurized milk. Recent data suggest that as many as three or four percent of Americans consume raw milk; using these data instead of the one percent figure would make pasteurized milk appear up to twice as dangerous as raw milk on a per-serving basis.

THE RECORD FOR PASTEURIZATION

Mark McAfee from Organic Pastures Dairy in California has compiled a list of all the outbreaks from pasteurized milk and pasteurized milk products since 1966. During this period there have been 153,657 illnesses, 188 hospitalizations and seventy-three deaths from pasteurized milk and pasteurized milk products.² The average number of illnesses per year over the fifty-year period is 3073.

Ted Beals, MD, has kept a list of reported

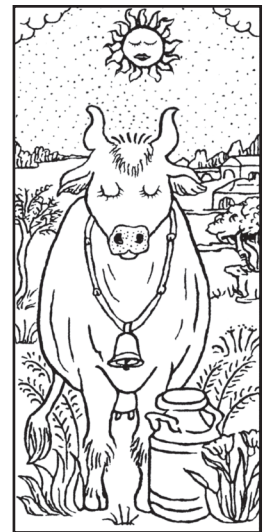
RAW MILK THRIVING IN THE U.K.

In 2015, the U.K. Food Standards Agency (FSA) ruled to keep raw milk legal under existing restrictions. Since that time the number of raw milk producers in England and Ireland has increased at least 100 percent. There is even a courier service to supply raw milk to all of Scotland (where raw milk production is prohibited).

London chapter leader Phil Ridley has obtained a listing of all the UK dairies licensed to sell raw milk. It is posted at www.food.gov.uk/science/raw-drinking-milk-and-cream.

In addition, our North Wales chapter leader Ben Pratt has compiled a list of over one hundred raw milk producers in the UK and Ireland along with an interactive map, posted at www.facebook.com/RawmilkUKandIreland/. We have also posted this information at realmilk.com.

Thank you, Phil and Ben, for all your efforts for raw milk in the UK. Many consumers, especially children, are benefitting from your endeavors.



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, RealMilk.com for additional information and sources of *Real Milk* products.

illnesses from raw milk since 1999. This list indicates a maximum of fifty reported illnesses per year from raw milk. This is 2 percent of the rate of illnesses from pasteurized milk. If over this period 2 percent of the population has consumed raw milk, then the rate of illness from raw and pasteurized milk is about equal.

However, the vast majority of the illnesses claimed for raw milk are not proven, simply reported. For example, a report “Raw Milk Cons: A Review of the Peer-Reviewed Literature,” compiled by the personal injury attorney William Marler, cites one hundred two references for illness caused by raw milk. An analysis of these studies shows that 96 percent of these reports found no positive milk sample or no valid statistical association.³ That means that the number of illnesses caused by raw milk is probably far lower than the fifty per year claimed in the literature. And the key point remains: no published study records any deaths from raw milk.

DR. BEAL’S DATA

Here’s another way of looking at Dr. Beal’s data: during the eleven-year period of 1999 to 2010, illnesses attributed to raw milk averaged forty-two per year.⁴ With at least 9.4 million people consuming raw milk, the rate of illness from raw milk is about .00044 percent. The CDC reports an estimated 48,000,000 cases of foodborne infections per year in the U.S. population of about 300,000,000. The rate of illness from all foods can then be calculated at 16 percent. Thus, one is at least 35,000 times more likely to contract illness from other foods than from raw milk.

Yet another way of looking at the data is as follows: between 1998 and 2005, there were over 10,000 documented outbreaks that contributed

to 199,263 documented cases of foodborne illness. Raw milk as associated with 0.4 percent of these cases, a number that is probably exaggerated. There is no way to quantify whether any of these foods is safer than other from these data, but it is clear from these data that there is no basis for singling out raw milk as “inherently dangerous.”

VIRULENT *E. COLI*

The most serious illness ascribed to raw milk is infection by the virulent strain of *E. coli* O157:H7. The number of *E. coli* O157:H7 cases nationwide is difficult to determine, but in California, there are apparently about seventy-five “clusters per year (personal communication of a California Health Department official to Mark McAfee of Organic Pastures Dairy). We can assume about ten cases per cluster or seven hundred fifty per year in California. Over a twelve-year period, that would be nine thousand cases. About 3 percent of the population of California consumes raw milk. If raw milk drinkers contracted the pathogen at the same rate as the general population, we would expect about two hundred seventy raw milk drinkers to be infected during the period. But in fact, there have been only seven raw milk drinkers who have contracted *E. coli* O157:H7 during the twelve-year period of 1999-2011. The low number of raw milk drinkers infected with *E. coli* O157:H7 suggests that raw milk is actually protective against this pathogen.

RAW MILK IS INHERENTLY SAFE

In the early days, we did not have much evidence to refute the headline-grabbing claims against raw milk, but today we have years of input and records. And these records show us that the claim of inherent danger in raw milk is false. While it might be difficult to come up with a precise comparison of illnesses per person for raw versus pasteurized milk, it is abundantly clear that raw milk is not more likely to cause illness than pasteurized. The key point is that there has never been a confirmed death from raw milk, but there have been over seventy deaths from pasteurized milk and pasteurized milk products. ☺☺

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3. www.realmilk.com/wp-content/uploads/2012/11/ResponseToMarlerListofStudies.pdf.
4. www.realmilk.com/real-milk-pathogens.html.



MEMBERSHIP POSTER

Membership is the main source of financial support for the many projects of the Weston A. Price Foundation. We appreciate your help to increase membership. We are happy to send a free copy of our membership poster to those who will display it.

The poster is 8.5" x 11" with a cardboard flap that allows it to stand. It goes well with our Dietary Guidelines booklet. It can be displayed at an exhibit, a doctor's office, a library, a farmers market, etc.

If you would like to display it, please write for a free copy: info@westonaprice.org.

RAW MILK UPDATES
by Pete Kennedy, Esq.

FEDERAL – THE BAN THAT NEVER WAS

The interstate ban on raw milk for human consumption went into effect in 1987. The position of the Food and Drug Administration (FDA) has long been that the prohibition applies to all raw milk in interstate commerce. The truth is otherwise; a reading of the law clearly shows that the ban applies only to cow's milk. The shipment of raw goat milk, raw sheep milk, raw camel milk, raw water buffalo milk, etc., in interstate commerce is all legal; the ban on raw dairy from animals besides cows applies only to products other than raw milk and aged raw cheese. In other words, for cows only aged raw cheese is legal; for all other dairy animals, raw milk and aged raw cheese are legal.

Like so many laws, it all comes down to the definitions in the regulations. The federal regulation establishing the ban, 21 CFR 1240.61, states: “(a) No person shall cause to be delivered into interstate commerce or shall sell, otherwise distribute, or hold for sale or other distribution after shipment in interstate commerce any milk or milk product in final package form for direct human consumption unless the product has been pasteurized...”

A separate regulation, 21 CFR 1240.3, has the applicable definitions of “milk” and “milk products.” The definition in 21 CFR 1240.3(i) states, “Milk is the product defined in §131.110 of this chapter.” Regulation 21 CFR 131.110 provides, in part, “Milk is that lacteal secretion practically free from colostrum, obtained by the complete milking of one or more *healthy cows*...” By contrast, the definition of “milk products” in 21 CFR 1240.3(j) is “Food products made exclusively or principally from the lacteal secretion obtained from one or more *healthy milk-producing animals*...” (emphasis added).

In 1992 when FDA proposed adding the definitions for “milk” and “milk products” to 21 CFR 1240.3, the agency made the following statement in the *Federal Register* (57 FR 1407.1408): The purpose of these technical amendments is, first, to set out these dairy products that are covered under Section 1240.61. Therefore, in Section 1240.3, FDA is defining “milk” and “milk products.” FDA is proposing to adopt as its definition for “milk” the standard of identity for this food in 21 CFR 131.110. FDA is proposing to use the standard as its definition because the agency believes that it should use consistent definitions in regulations. *The definition for “milk products” includes all foods other than “milk” normally regulated by state and regulatory agencies as dairy products under federal or state law or under state model ordinances such as the Grade A Pasteurized Milk Ordinance* (emphasis added).

The judicial and administrative actions over thirty years ago that led to the raw milk ban concerned, either entirely or almost entirely, only cow's milk. If FDA is contemplating amending the regulation establishing the ban to extend it to all raw milk, the agency needs to consider the fact that the ban on raw cow's milk has been about as effective as the prohibition on alcohol was during the 1920s. The sign of a bad law is one that otherwise law-abiding citizens violate regularly; 21 CFR 1240.61 fits that description to a tee. The ban came about because a court ordered FDA to issue a regulation, *not* because any law passed by the people's branch, Congress. Instead of expanding the ban, FDA should repeal it, legalizing the sale of all raw dairy products in interstate commerce; thirty years of the agency denying freedom of food choice on these products is more than enough.

MARYLAND: THREAT TO RAW PET MILK DIES

A threat to Maryland producers of raw pet milk quietly went away on November 28 when the state Secretary of Agriculture Joseph Bartenfelder sent out a letter to interested parties stating that the Maryland Department of Agriculture (MDA) would *not* be including a requirement to put a dye in raw pet milk in regulations the department would be issuing governing raw pet milk sales. Inclusion of the dye requirement would have collapsed the market for raw pet milk in the state.

It was suspected that the Maryland Department of Health and Mental Hygiene (DHMH) was pressuring MDA into adopting the dye mandate. DHMH has jurisdiction over raw milk production and sales for human consumption, which are prohibited in Maryland, while MDA has jurisdiction over raw milk production and sale for pet consumption. Pet milk producers in the state became worried when officials at MDA did not respond to inquiries about the dye requirement over a several-month period. It was the letter from Secretary Bartenfelder on behalf of the Governor's office that broke the department's silence on the matter.

As far as is known, MDA had never approved the sale of raw pet milk by in-state producers before the fall of 2015 even though the department has long had the legal authority to do so. Since that time, MDA has approved a number of producers for selling raw pet milk including Grade A dairies that had previously only been producing raw milk for pasteurization. The way the approval process works in Maryland is that a producer interested in selling pet milk files an application for registration with the Office of the State Chemist, a division of MDA. If the state chemist approves the application, then the applicant is officially registered and can start selling the product (See *Wise Traditions* Winter 2016 issue for background).

The proposed regulations MDA has submitted governing raw pet milk include packaging and labeling requirements as well as a requirement that pet milk sold at a retail store cannot be displayed with or in the vicinity of milk or milk products intended for human consumption. According to Bartenfelder, the draft regulations will be available online at www.dsd.state.md.us/MDR/mdregister.html, and the public will have an opportunity to comment on the proposed rules.

MICHIGAN: STATE CONTROL OVER PRIVATE PROPERTY

A troubling aspect of food regulation is how government agencies believe they can intrude into activity that is far removed from the stream of public commerce. A glaring example of this is now a matter of public record in Michigan. On October 14, there was a hearing in Ingham County Circuit Court over a petition from the Michigan Department of Agriculture and Rural Development (MDARD) to hold dairy farmer Joe Golimbieski, his wife Brenda, Hill High Dairy LLC, and BJ's Cow Boarding in contempt for violating a court order enjoining them from violating Michigan's Food Law, Grade A Milk Law, and Manufacturing Milk Law; a transcript of the hearing has been released.

Joe Golimbieski is the sole operator of Hill High Dairy LLC, which sells milk produced by the LLC's seventy cows to Horizon. Brenda Golimbieski is the manager of BJ's Cow Boarding, which leases its own herd of fifteen cows to those wanting to obtain raw milk. Judge James Jamo issued an injunction against the four defendants in January 2016 after MDARD claimed that, among other things, the four were illegally distributing raw butter and cream (see *Wise Traditions* Fall 2016 issue, "Michigan – Leaseholder Lobsinger Sues over Seized Cream" for background).

In 2013 MDARD adopted a written policy, Policy 1.40, that legalized the unregulated distribution of raw milk through a written herdshare or herd lease agreement (a herdshare agreement involves a person who purchasing an ownership interest in a dairy animal or animals and hiring the farmer to board, care for, and milk the animal(s); the difference in a herd lease agreement is that someone leases the dairy animal(s) and holds ownership rights in the animal(s) for the term of the lease). Policy 1.40 stated that herd share programs were only considered to include raw milk and not other dairy products such as butter and cream; the production of other dairy products was subject to applicable MDARD laws such as licensing requirements. The policy did acknowledge that the distribution of raw milk to shareholders was not a sale but rather just the shareholder obtaining milk from his or her own animal(s).

What MDARD didn't count on when it filed for an injunction against the Golimbieskis, Hill High Dairy and BJ's was that a leaseholder would intervene in the action, but that is what happened when Mike Lobsinger successfully petitioned the court to be added to the case as a third-party defendant. Lobsinger has his milk separated into cream by another leaseholder at the Golimbieski farm; he has filed a separate lawsuit against MDARD for denial of his due process rights stemming from the seizure of his cream by an MDARD inspector during a raid of the farm in June 2016. Lobsinger was also a third-party defendant in the contempt hearing in October; it was his presence that changed the dynamic in the case from focusing only on whether there were violations of Michigan dairy and food laws to also covering what private property rights shareholders and leaseholders have.

The contempt hearing began with MDARD's attorney Danielle Allison-Yokom pursuing the alleged violations by the defendants but ended with the department on the defensive. In her attempt to show that the defendants had violated the law, Allison-Yokom stated, "There is no exception anywhere in the law that permits processing by any person, herd share member, entity or anyone else of dairy products. You must have a license to do that activity" (Michigan Department of Agriculture v. Golimbieski et al, "Motion to Show Cause" transcript, File no. 15-574-CZ (October 14, 2016) , p. 31).

Lobsinger's attorney, John Siers, exposed how far-reaching this assertion of state jurisdiction went in his response to the state's claim: "Well, at what point does the individual herd share member have any property rights? ...the herd share members are doing it [processing] for their own consumption. This is not entering into the stream of commerce. This is not being turned around and sold to other people...This is a private property question. This is milk belonging to the herd share members. This state wants to tell the herd share members that they cannot change that milk in any way. They can't allow it to separate. They can't ... churn it into butter. But if we were to go to Trader Joe's, Kroger, and buy high butter fat milk and decide to turn that into another product in our own home or even bring in somebody to help us with that, now, is that processing (transcript, p.39-40)?"

Allison-Yokom's response to Siers was this: "...the department does not say you can't take milk home, or Mr. Lobsinger [sic] can't take milk home and process it in his own kitchen. The statute and the enforcement scheme limits their authority there. But he can't have someone else do it for them. To do that, that person must be licensed" (transcript, p. 45).

When Judge Jamo asked, "...has this particular issue been addressed in any case law in this state?", Allison-Yokom admitted that it had not (transcript, p. 47).

The word "private" would have no meaning if the judge sided with MDARD on this matter. The state is claiming that if Lobsinger had someone come to his house to separate the cream in his kitchen, the state would have jurisdiction. The Michigan dairy processing laws were meant to cover sales and distribution to the general public, not to prevent the owner of raw milk from having someone else process that property into another dairy product for the owner's own consumption. If the court sides with MDARD on this one, private property rights and common sense are out the window.

Those who have not joined the Farm-to-Consumer Legal Defense Fund are encouraged to do so. Membership applications are available online at farmtoconsumer.org or by calling (703) 208-FARM (3276); the mailing address is 8116 Arlington Blvd, Suite 263, Falls Church, VA 22042.

Healthy Baby Gallery



Finn and Reid (aka Husky and Slim) have been best friends since their respective mothers conceived them just a month apart. Reid (on left) and Finn (on right) are five months in this picture. Finn and Reid's parents are best friends and have been eating a mostly WAPF-style diet for years. These boys could not be more different—but have their health, happiness and vibrant personalities in common. People often remark on how healthy they look! Now nine months, they both love cod liver oil, broth, liver, egg yolks, sauerkraut and yogurt; in fact, they haven't met a food they don't like! Both boys are grateful to be fed so well and will be sure to thank their mothers in the future for the countless hours in the kitchen! Thank you WAPF for these well-nourished babies!

This is Jasper Johanson at eleven months, chewing on his favorite teething toy, a lamb bone. He refuses all plastic or wooden teething toys but loves this one!

He has been on the Weston A. Price baby formula for several months and loves all food especially wild Alaskan fish eggs, egg yolk and bits of raw beef liver. His joy and giggle are infectious!



Please send your photos and captions for the Healthy Baby Gallery to journal@westonaprice.org.

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STILL SERVING AFTER SIXTEEN YEARS!

Our first chapter list in the Spring 2000 issue of *Wise Traditions* contained eleven chapters. By the end of 2000, we had thirty-nine chapters. Today, sixteen years later, we now have over five hundred!

We have eleven chapter leaders who started in 2000 and are still volunteering their time as beacons of light, education and guidance to people seeking nourishing, healthy foods. We salute the following:

Started Spring 2000:	Louise Turner (MA originally, now NH)	
	Kim Lockard (MI)	
	Kathryn Stockdale (OH)	
Started Summer 2000:	Doug Flack (VT)	
Started Fall 2000:	Bari Caine (CA now NV)	David Wetzel (NE)
	Thomas Earnest (NM)	Dina Falconi (NY)
	Jill Teibor-Franz (NY)	Silvana Castillo (NS, Canada)
	Joseph Ouimet (ON, Canada)	

“Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it’s the only thing that that ever has.” Margaret Mead

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Chapter leaders gather at the Wise Traditions 2016 pre-conference chapter leader meeting.

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GREEN BABY FAIR, MIAMI, FLORIDA



LEFT: Mary Palazuelos-Jonckheere, South Miami-Dade County chapter leader and Melissa Carey, a certified midwife, “woman” the WAPF table at the Green Baby Fair in Miami, Florida. RIGHT: Winner of *The Nourishing Traditions Book of Baby & Child Care*. Many moms and dads got WAPF brochures and were very open to learn about traditional nutrition—and shocked to learn that facial structure is not genetic.

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CHAPTER RESOURCES

Resources for chapter leaders can be accessed at westonaprice.org/local-chapters/chapter-resources, including our trifold brochures in Word format, chapter handbook and PowerPoint presentations.

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Thank you to Maureen Diaz, a chapter leader in Pennsylvania, for administering the local chapter chat group.
New chapter leaders can sign up at <http://groups.yahoo.com/group/wapfchapterleaders/>.

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 402 serve every state in the U.S. (except North Dakota) plus the District of Columbia
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DR. SYLVIA ONUSIC AND HARDIN COUNTY CHAPTER LEADER AT OHIO NORTHERN UNIVERSITY

Dr. Sylvia Onusic spoke to over eighty people in September 2016, at the Forum on the Ohio Northern University Campus in Ada, Ohio. The topic was "Preventing ADHD, Alzheimer's, and Depression: The Diet-Brain Connection." Jane Kraft, Hardin County chapter leader, and Emma Jordan greeted guests. Jane introduced Sylvia to the group and also discussed the work of the Weston A. Price Foundation. After the talk, the audience posed many thoughtful questions. In addition to Jane Kraft, members of the chapter, Jodi Ledley, Emma Jordan, Linda Houchin and others worked diligently to promote the



talk. The chapter hosted a tour of Jodi Ledley's farm the following day. LEFT: Chassie Schwerner (optometrist), Jodi Ledley (center), Jane Kraft, Sylvia Onusic (front left) and Linda Houchin. RIGHT: Jodi Ledley and Linda Houchin with one of Jodi's turkeys.



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LOCAL CHAPTER BASIC REQUIREMENTS

1. Create a food resource list 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 potluck dinners, to present the WAPF 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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MD

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Nick's Organic Farm. Grass-fed beef (no grain ever), free range eggs, pastured chicken and turkey. Liver, organ meats, and bones. Organic poultry feed. Pick up in Potomac or Buckeystown. Our livestock are rotated to fresh pastures on our fertile organic soils and receive organic feed, no hormones, antibiotics, or animal parts. We raise our cows 100% grass-fed. We raise our hay, raise and grind our own grain into poultry feed and process our poultry. Quality organic products since

1979. (301) 983-2167, nicksorganicfarm@comcast.net, nicksorganicfarm.com.

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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 sources for health-conscious individuals. No antibiotics, steroids or GMOs ever fed to our animals! (616) 837-9226, CreswickFarms.com.

Pastured pork, chicken, beef and lamb sold from farm or delivered monthly to your home from Grand Rapids to Cadillac; Muskegon to Mt Pleasant. No GMOs, no soy and no chemicals. Come visit the farm! Provision Family Farms, White Cloud.

MN

Farm On Wheels offers animals raised green grass-fed & certified organic. Nutrient-dense beef, lamb, chicken, eggs, turkey, goose, duck, and pork, No corn or soy. Farmers Market year around in St. Paul, Prior Lake, Northfield. Linda (507) 789-6679, farmonwheels.net, farm_on_wheels@live.com.

MS

Nature's Gourmet Farm raises nutrient dense grass-fed beef, pastured pork, and pastured broilers. Animals are hormone, antibiotic, and GMO free! We service south Mississippi, Alabama and Louisiana. For details and order information visit our website at www.naturesgourmetfarm.com.

OH

Sugartree Ridge Grassfed. Openings in 100% grassfed herdshare with nine delivery sites in the Cincinnati area. No grain, no silage. Sixteen cows (cross between Jerseys, Guernseys, Brown Swiss and British White) grazed year-round on sixty acres rotating through thirty paddocks (which are allowed to grow for sixty days between grazings and are spread with organic, Albrecht-based mineral supplements). Nutrient-dense milk, family-friendly farming and holistic stewardship. 6851 Fair Ridge Road, Hillsboro, OH 45133.

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Grass-based biodynamic raw milk dairy offering Jersey Hi-creamline milk, cream, golden butter, cottage cheese and aged cheeses.

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Wentworth Dairy. Grass-fed raw milk, raw milk cheese, free-range eggs, pastured pork, grass-fed beef. We are located 8 miles from MD state line. Family farm, all natural grass-based, Ayrshire and Jersey cows. Rob & Bonnie Wentworth, 1026 River Road, Quarryville, PA 17566, (717) 548-3896.

NY

MYS-permitted raw milk on Long Island, from grass-fed pastured Jersey cows. Visitors welcome. 5793 Sound Ave, Riverhead, NY 11901. (631) 722-4241.

VA

Salatin family's Polyface Farm has salad bar beef, pig-aerator pork, pastured chickens, turkeys and eggs, and forage-based rabbits. Near Staunton. Some delivery available. Call (540) 885-3590 or (540) 887-8194.

WY

Meadow Maid Foods, 100% grass-fed, grass-finished beef. On pasture year-round at the family ranch in Goshen County. Production practices detailed on our website. Custom beef, Cheyenne farmers markets and local delivery. (307) 534-2289, meadowmaidfoods.com.

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DVDS

DVD "Nourishing Our Children" recently launched a DVD that may be used for one's self-education or to present to an audience. You will learn how to nourish rather than merely feed your family. nourishingourchildren.org/DVD-Wise.html Free shipping!

SHARE YOUR PASSION for food with friends and family! The Diet for Human Beings affirms our human requirement for fats, with less emphasis on starchy carbs. "An Hour To Watch – 30 Days To Try – Your Life Will Never Be The Same" on dietandhealth.com.

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FARM FAMILY OR INDIVIDUAL needed to help set up and live on pristine 164 acre former raw dairy farm and cheese making facility in SW Washington state. If interested, please send email to Lawren@wellaroo.com with subject line: "dairy farm".

HIRE STOOL DONOR Child with autoimmune disease needs fecal transplants. Donor WAP-type diet. Adult or child over 1 year. FTP used successfully for son. (325) 261-8870, cececebrown@gmail.com. Per GI-doctor, son needs to continue FTP for limited course. Prior donor moved overseas.

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A wonderful WAPF-Inspired fine dining restaurant is now recruiting talent. Farmageddon filmmaker, Kristin Canty is hiring for her new venture, Woods Hill Table, a traditional foods restaurant in her home town of Concord, MA. To our knowledge, this is the first-ever WAPF inspired fine dining restaurant. From frying in beef tallow, soaking grains, and raw fermented foods to serving kombucha flavor of the day on tap, Kristin is implementing the WAPF dietary guidelines and changing restaurant history. If you'd like to be a part of this exciting culinary project, her Concord Restaurant Group is looking for a service manager, servers, reservationists, chefs and line cooks. Contact Kristin@woodshilltable.com; 24 Commonwealth Ave, Concord, MA, 01742; woodshilltable.com, jobs@woodshilltable.com, (978) 369-6300.

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WAPF RESEARCH

STUDY ON HEALTHY BABIES: Johanna M. Keefe, MS, RN, GAPs, Advanced Holistic Nurse, & Gena Mavuli, MA, NC are seeking volunteers for a PhD research project in Transformative Studies through CIIS (California Institute for Integral Studies). If you have had a healthy baby using the WAPF dietary guidelines, they would like to hear from you. They would like to interview you by Skype, Facetime, or in person if you are located in New England, northern California or North Carolina—<https://realfoodsuccesstories.wordpress.com/>, growingsuccesstories@gmail.com, (978) 290-0266.

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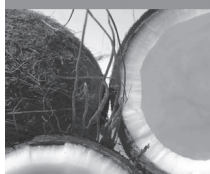
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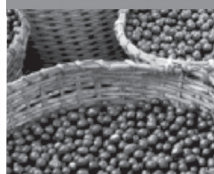
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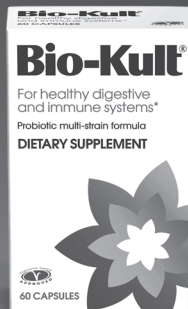
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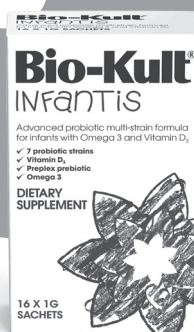
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Fish That We Eat *Iqaluich Niginatuat*

This manual by Anore Paniyauraq Jones is the second in a series of three detailing the traditional foods of the Inupiat. The first book in this series about Inupiat foods was *Nauriat Niginatuat*, *Plants That We Eat*, an ethno-botanical manual, long out of print but due to be re-printed in the fall of 2009 by University of Alaska Press. It is 150 pages with black and white photos and sketches.

The second manual, *Iqaluich Niginatuat*, *Fish That We Eat*, provides information regarding the traditional use of fish, their processing, recipes and eating enjoyment. It was compiled from the local traditional fish knowledge of northwest Alaska and was partially funded and placed on the web by the U.S. Fish and Wildlife Service.

The third manual in this series will similarly detail the traditional Inupiat processing techniques and recipes for sea mammals.

Presently there is no funding to support this work. Any suggestions would be welcome. The web link to *Iqaluich Niginatuat*, *Fish That We Eat*, is below. The report is located under the U.S.F.W. Northwest AK section. From here you can read it and/or download and print it. It should be printed double-sided due to the length (341 pages), including 100+color photos, sketches.

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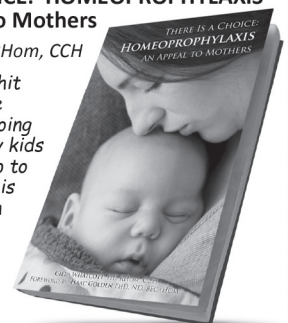
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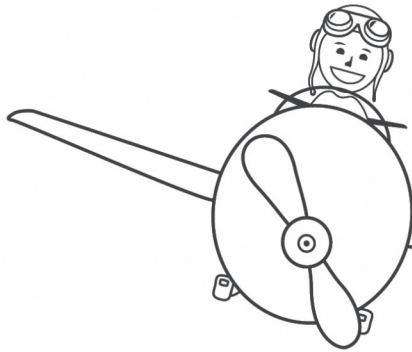
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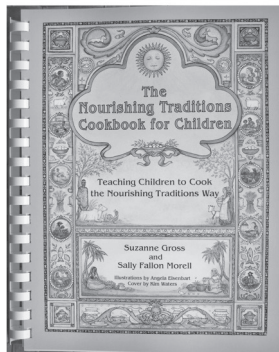
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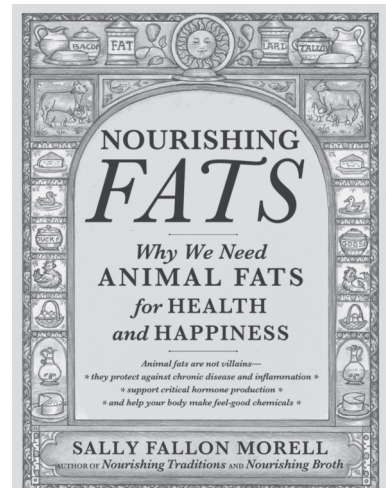


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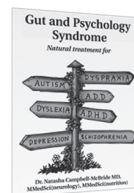


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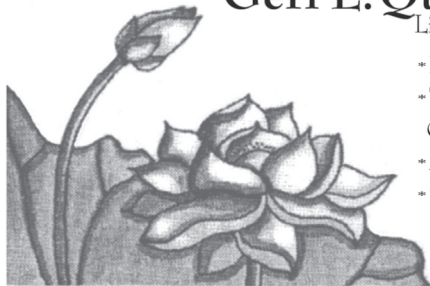
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4200 Wisconsin Avenue, NW, PMB #106-380 Washington, DC 20016

Please submit classified ad copy, advertisement graphics, questions and payments to: info@westonaprice.org, (202) 363-4394.

CLASSIFIED

ADVERTISEMENTS

TEXT ONLY,

BY STATE & CATEGORY

\$40 per year for 40 words

MEDIUM COLUMN

2" tall by 2.5" wide

\$200 per year, 4 insertions.

(\$240 for non-members)

DESIGN Please do not submit images smaller than 500k as they will not print well. Files should be grayscale tiff or press quality pdf/eps minimum 300 dpi. There is an additional fee of \$50 for us to design your advertisement.

TALL COLUMN

4" tall by 2.5" wide

\$360 per year,

4 insertions.

(\$400 for non-members)

WIDE COLUMN

2" tall by 4.5" wide

\$360 per year, 4 insertions.

(\$400 for non-members)

The Weston A. Price Foundation reserves the right to refuse advertising space to anyone. We do not accept ads for coffee, tea, chocolate, hemp (as a food) or protein powders, nor products offered by Multi-level Marketing Companies.

Membership

NEW OR RENEWAL

Yes! I would like to become a member or renew my membership in the Weston A. Price Foundation and benefit from the timely information in **WiseTraditions**, the Foundation's quarterly magazine!

<input type="checkbox"/> Regular membership	\$40	<input type="checkbox"/> Canadian membership	\$ 50
<input type="checkbox"/> Student membership	\$25	<input type="checkbox"/> Overseas (credit card payment only)	\$ 50

Yes! I would like to help the Weston A. Price Foundation by becoming a member at a higher level of support.

<input type="checkbox"/> Special membership \$100	<input type="checkbox"/> Benefactor membership \$1,000
<input type="checkbox"/> Sponsor membership \$250	<input type="checkbox"/> Millennium membership \$10,000
<input type="checkbox"/> Patron membership \$500	<input type="checkbox"/> Other amount \$ _____ (over \$25)

Yes! Count me in! I would like to help spread the word!
Please send me _____ copies of the Weston A. Price Foundation informational brochure at \$1.00 each, so I can pass them along to my family, friends and colleagues, and be true to Dr. Price's dying words:
"You teach, you teach, you teach!"
(Health professionals are encouraged to provide this brochure to their patients.)

Yes! I would like to provide my family and friends with the gift of membership in the Weston A. Price Foundation.
(Please attach information on gift memberships.)

<input type="checkbox"/> Regular gift membership(s) \$40
<input type="checkbox"/> Student/Senior gift membership(s) \$25
<input type="checkbox"/> Canadian and overseas gift membership(s) \$50

Yes! ☐ Please send me details about starting a Weston A. Price Foundation local chapter in my community.

I'm enclosing \$ _____ for brochures and \$ _____ for _____ annual membership(s), a total of \$ _____

Payment method: ☐ Check or money order (Please do not send cash) ☐ Mastercard ☐ Visa

Card Number: _____ Expiration Date: _____

Name (Mr)(Mrs)(Mr&Mrs)(Ms)(Miss)(Dr): _____

Signature: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Email: _____

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The Weston A. Price Foundation
PMB #106-380 4200 Wisconsin Avenue, NW Washington, DC 20016
FAX: 202-363-4396
TELEPHONE: 202-363-4394

Upcoming Events

2017

- Feb 17-18 Ronks, PA:** Real Health Conference featuring Sally Fallon Morell, Donald Huber, Gearld Fry and many other speakers on nutrition and sustainable farming. **Contact:** www.lancasterag.com/Events.aspx.
- Mar 16-18 Chicago, IL:** Good Food Festival, featuring Sally Fallon Morell and Urban Bus Farm Tour. **Contact:** goodfoodfestivals.com/.
- Mar 26-27: Thomond, Ireland:** Wise Traditions, Ireland 3 featuring Dr Natasha Campbell-McBride, Zoe Harcombe, Ivor Cummins, Sam Feltham. wapfmunster.com Contact: Anne Maher, maher-anne1@gmail.com.
- Nov 10-13: Minneapolis, MN:** Wise Traditions 2017; 18th Annual Conference of the Weston A. Price Foundation. Details to follow.

SAVE THE DATES!

WiseTraditions 2017

18th Annual Conference of the Weston A. Price Foundation
November 10-13, 2017
Minneapolis, Minnesota

Recordings of Wise Traditions 2016: westonaprice.org

THE WESTON A. PRICE FOUNDATION®



for **Wise Traditions**
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COMMUNITY SUPPORTED AGRICULTURE

You teach, you teach, you teach!

Last words of Dr. Weston A. Price, January 23, 1948



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