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Wise Traditions

IN FOOD, FARMING AND THE HEALING ARTS

A PUBLICATION OF THE WESTON A. PRICE FOUNDATION®



Education ♦ Research ♦ Activism
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Volume 27 Number 2

Summer 2026

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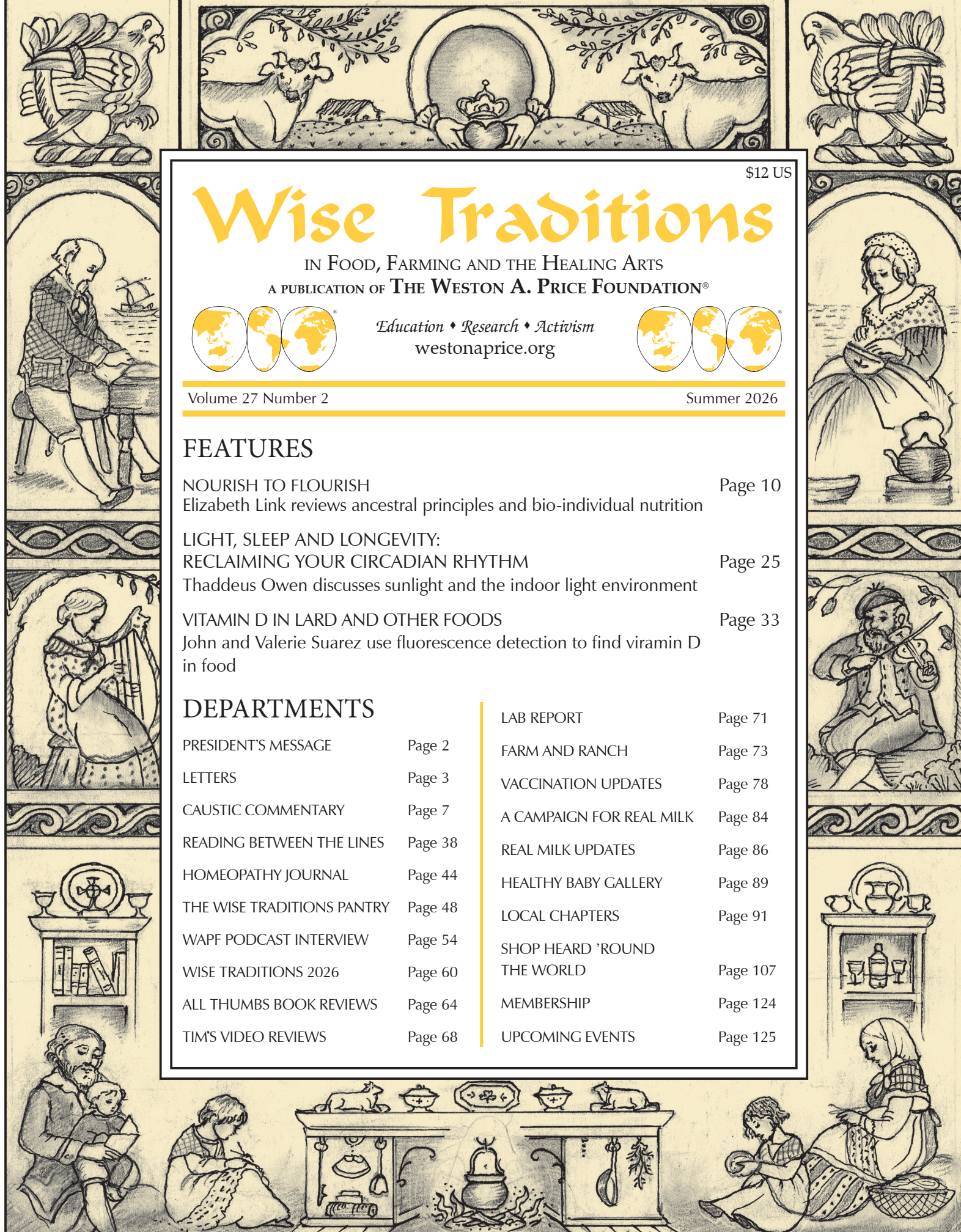
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THE WESTON A. PRICE FOUNDATION®

Education ♦ Research ♦ Activism

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

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

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

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

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



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President's Message

Yes, Virginia, there really is vitamin D in lard! This is what we found as a result of testing seven foods using fluorescence detection (see page 33). We also found vitamin D in cod liver oil, chicken liver, goose fat, egg yolk and two samples of butter, but the real surprise was the indication of high levels of vitamin D in lard!

Years ago, lipid researcher Mary Enig told me about studies carried out by USDA which found substantial amounts of vitamin D in lard. These findings were never published, and even today, food tables do not show lard as a significant source of vitamin D. An AI search tells us that “on average, lard provides about 1-2 IU of vitamin D per tablespoon. It is not a significant source of vitamin D compared to fortified foods or fatty fish.”

Some years ago we had some lard tested by an independent laboratory; which found very high levels of vitamin D in lard from pasture-fed pigs, as much as 1000 IU per tablespoon. The technician explained to me that it is difficult to separate vitamin D in lard from its matrix, but he knew how to do it; hence, the high levels that he found, levels similar to those found in the early USDA tests. But when we sent lard in for a second test, he found almost none. When I questioned him on this, he became very evasive, almost as though he'd been warned not to do the testing protocol that separated the vitamin D from its matrix and yielded high results.

The testing we have just done does not give us actual values for vitamin D in lard. However, it is clear that lard is a very good source of vitamin D, with a much higher intensity than any of the other foods we tested.

More testing is planned. Stay tuned for results for vitamins A and K2!

By the way, the fluorescence testing shows us that, indeed, vitamins do exist! The current scuttlebutt making the rounds on the Internet holds that there is “no such thing as vitamins” because to find them you need to subject the food sample to high heat, acids and other intense chemical processes. But fluorescence testing merely shines a light on the food. Our study found the same vitamin-D wavelength in supplements and in real food. Of course, in the real food, vitamin D is supported by co-factors such as vitamins A and K2, while in the isolated vitamin D, the lack of co-factors means that the vitamin can have toxic effects.

We're looking forward to the results of further research but meanwhile you can enjoy lard as a powerhouse of vitamin D, a real health food! 

Letters

VITAMIN A ARTICLES

I want to thank WAPF and Pam Schoenfeld for her articles on vitamin A, they are excellent. I can't wait for my chance to provide this info to the moms at our local ZoeCare holistic clinic. The article on vitamin A for growth and development (Spring 2026) could suffice for several sessions!

Throughout the article I could think of examples where her concerns have played out in real time for myself, my family and friends.

Mary Walkes, Chapter Leader
Yankton, South Dakota

TESTIMONIALS STILL WELCOME

During the closing panel of last year's conference, an idea was floated that our outreach and influence could be extended even further by modeling what good eating (and healthy living in general) actually looks like. This is the kind of thing that really attracts others.

One easy way to do this is with testimonials—similar to the kinds of letters printed here in the journal, but maybe shorter—of some solution, practice or insight that has improved your life (or that of family members, friends or acquaintances) as a result of any knowledge or support you've received

from the Weston A. Price Foundation. Our expressions of health and satisfaction might well be the information and inspiration emulated by others to improve their own lives!

We are still happily receiving short letters from the community, which will be organized into general topics for easy access and perusal. (You can send them in the form of PDFs, standard word processing docs or just included in an email.) Please send to wap.jewels@gmail.com.

We continue to be grateful to you all in making the Weston A. Price Foundation the awesome movement that it is. Thank you.

Mark Hurwit, volunteer
Eugene, Oregon

VICTORY IN CANADA

Success! A bill was introduced here in Canada to reverse a previous government action that placed natural health products in the same category as pharmaceutical drugs. I contacted the WAPF with a written announcement for them to send to WAPF members here in Canada. We were delighted to see that the bill to protect natural health products passed unanimously on March 10 in the House of Commons! It is now

working its way through Parliament on its way to becoming law!

Thanks very much for your email to the Canadian WAPF members. The reason given for this surprising outcome was the overwhelming amount of correspondence received by the Members of Parliament. This is a testimony to what a few dedicated people can do to make positive change—WAPF members make a difference! Thank you!

Roger Coutts Umstead
Sudbury, Ontario, Canada

REINSTATED

In September 2020, I visited my local library to pick up books checked out online. While picking up the books that were placed near the front door, the librarian asked me to don a mask.

I declined and stated that I had a "I-need-to-breathe" exemption. She asked me to wait so she could add me to a list but I walked out without saying a word. I did not need or want my name on their list.

The next week when I went in to get a new book, she was waiting for me and handed me a "pink" slip, literally it was pink. The slip stated I was now barred from every branch of our local library district. Unbelievable, as I am



SEEKING WHOLE HEALTH CONFERENCE

Sally Fallon Morell, WAPF president, and Maureen Diaz, WAPF outreach, both spoke at the recent Seeking Whole Health Conference in Wooster, Ohio. It was a fantastic weekend with lots of good connections, new people reached and many new members! From left to right: Maureen Diaz, Sally Fallon Morell, Janis Steiner, Leona Vrbanac and Ian Meschke.



Letters



a taxpayer. To get my card back, I was required to meet with their security officer and their social worker. No way was I doing that nonsense.

Fast forward to October 2025, while driving home from the Wise Traditions conference in Salt Lake City, I was relaying my story to a friend who drove with us. She knows one of our local county commissioners and offered to write her an email explaining my situation. Three days later, I heard from the head of security at our library district stating that I was reinstated since the mask mandate had been lifted. I feel like this is a testimony to standing up for your beliefs and sticking up for what we know is right and not being bullied.

By the way, I was still using the services by borrowing a library card from someone I know—after all I am a taxpayer. Standing up for our food, medical and, in this case, the right to read is imperative in today's society. Hopefully my story will empower others to do the same.

Gina B, Chapter Leader
Colorado Springs North, Colorado

LIFESTYLE CHANGED

WAPF has changed the way I view my entire lifestyle and health. While it started with food and nourishment, I later expanded to think about all the inputs in our environment—from dropping cleaning and beauty products, sunscreen and the like, to seeking farm-fresh real milk, to rethinking allowable (or worse, “necessary”) annual vaccines, radiation and much more.

I continue to be so very grateful that I found the *Wise Traditions* journal, podcast and materials. Frankly, my

whole worldview and family's health have been profoundly affected for the better.

Dixie Huey
Florida

COOKING WITH KIDS

From an early age, I required my children to make one breakfast and one dinner every week. Even an eight-year old can learn to make bacon and eggs and do it well. In the beginning, I had to spend a lot of time with them, but eventually I didn't even have to be in the room when they prepared the meal; they could follow new complex recipes without any help. If they already have this practical experience doing it, I think there's a much better chance of them preparing healthy meals for themselves after they move out, and for their own families in the future.

Cooking with your children gets them away from electronic devices, and makes them a contributor to the family; it satisfies one of Maslow's top hierarchy of needs. It also helps a parent learn to let their child fail in small ways (like adding too much salt to a meal, or frying an egg without any grease), while providing opportunities for the children to learn from those mistakes. All of this helps them develop a wide variety of different skills that no one can ever take away from them.

Steve Araiza
Houston, Texas

INVASIVE PLANTS?

I'm a WAPF member and wanted to bring something to your attention (if you're not already aware of it). I recently saw online that New Jersey is banning

thirty species of trees and plants that they consider to be invasive starting in 2030. Maybe this is not uncommon and it's just the first I've seen of this kind of thing, but something about it made me take notice.

I think after seeing how common, well-established treatments were demonized and made inaccessible to us during the pandemic, and also knowing that traditional natural remedies for ailments are discouraged, mocked and minimized in favor of synthetic medications, I just wondered whether there was something more to this—that it wasn't just an aesthetic decision or ecological decision.

It may still be a stretch that the motives are nefarious, but I did do an online search of each of the species and all but one had known medicinal or food-source uses. Some even had environmental benefits (like removing PCBs and cleaning contaminated soil and water). Are they just ignorant or is this intentional in preparation for the next plandemic? See the sidebar for some of the species and the information I found on them.

Faith K
Lancaster, Pennsylvania

Editor's Note: Many of these are common garden plants. Will New Jersey officials raid people's gardens and spray with toxic herbicides? ☺☺☺

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

INVASIVE SPECIES OR MEDICINAL PLANTS?

- **NORWAY MAPLE** (*Acer platanoides*): Seed oil from *A. platanoides* has been identified as a source of gamma-linolenic acid, a beneficial dietary supplement.
- **TREE OF HEAVEN** (*Ailanthus altissima*): Also known as *chunpi*, its dried root and stem bark are used in traditional Chinese medicine to treat diarrhea, dysentery, gastrointestinal inflammation, spermatorrhea, epilepsy, asthma and menstrual bleeding. Studies show it has anti-bacterial, anti-inflammatory and tumor-inhibiting properties.
- **MIMOSA TREE or PERSIAN SILK TREE** (*Albizia julibrissin*): Considered highly medicinal in traditional Chinese medicine, and used for centuries to treat anxiety, depression, insomnia and irritability. Its inner bark and flowers are valued for their sedative, anti-inflammatory and calming effects.
- **PORCELAIN BERRY** (*Ampelopsis glandulosa*): Used in traditional Asian medicine as an anti-inflammatory, diuretic and liver tonic. Its roots, leaves and fruits are historically used (often topically) for treating bruises, boils, abscesses and aches. Studies also show high antioxidant activity in the plant.
- **JAPANESE ANGELICA TREE** (*Aralia elata*): A highly valued medicinal and edible plant in East Asia, often used for its anti-inflammatory, antioxidant and immunomodulatory properties. Rich in saponins, its roots and bark are used to treat rheumatism, liver diseases, diabetes and to reduce fatigue and stress. Modern research highlights its potential in protecting the liver, fighting tumors, reducing inflammation and protecting the nervous system.
- **JAPANESE BARBERRY** (*Berberis thunbergii*): The berries contain a unique compound called berberine, which acts as an antioxidant. It may help improve blood sugar control, treat diarrhea and fight inflammation related to dental infections and acne. Can be used in jam or jellies or added to salads.
- **JAPANESE CLEMATIS** (*Clematis terniflora*): A plant in the Ranunculaceae family, it is native to East Asia, Europe and North Africa. Traditional Chinese medicine uses this herb to treat tonsillitis, rheumatoid arthritis and prostatitis.
- **AUTUMN OLIVE** (*Elaeagnus umbellata*): Considered medicinal and highly nutritious, with berries containing up to seventeen times more lycopene than tomatoes, autumn olive is rich in carotenes, vitamin C, antioxidants and phytochemicals. It is used to treat inflammation, coughs, cardiovascular issues and to boost immune function. The berries, flowers and seeds are used to treat chronic diseases and reduce oxidative stress. Autumn olive has potential cancer-fighting properties, especially for prostate and skin. Extracts help manage diabetes (antidiabetic) and protect the liver.
- **WEeping LOVEGRASS** (*Eragrostis curvula*): Used in South African traditional medicine where its roots are utilized to address intestinal disorders and blood impurities. It is primarily valued as a forage grass, for erosion control and in rehabilitation.
- **WINGED BURNING BUSH** (*Euonymus alatus*): Considered a medicinal plant, particularly in traditional East Asian medicine, where it is used to treat conditions like hyperglycemia, diabetes, arthritis and gynecological issues. It contains numerous active compounds that exhibit anti-inflammatory, antioxidant and anti-tumor properties.
- **ENGLISH IVY** (*Hedera helix*): English Ivy leaf extract is a recognized medicinal herb, primarily used to treat respiratory conditions. It is widely used in Europe for its expectorant, antispasmodic and anti-inflammatory properties, particularly in syrups and drops for bronchitis, chronic coughs and mucus reduction.
- **JAPANESE HOP** (*Humulus japonicus*): Researched by NIH, in traditional Chinese medicine, *H. japonicus* has been used to treat pneumonia, diarrhea, hypertension, leprosy and tuberculosis. The leaves serve as a treatment for pulmonary tuberculosis, tuberculosis, cervical lymphadenitis and hypertension. In addition, previous studies have indicated that the extract possesses antioxidative, antibacterial, antimycobacterial, antimutagenic, anti-inflammatory and antitumor properties.
- **EUROPEAN PRIVET** (*Ligustrum vulgare*): Historically, leaves and bark were used for gargles, sore throats, wounds and skin infections, it is a diuretic and anti-inflammatory.
- **AMUR HONEYSUCKLE** (*Lonicera maackii*): Used to treat respiratory issues (colds, pneumonia) and as an anti-inflammatory. It is valued in traditional Chinese medicine for clearing heat and detoxifying.

INVASIVE SPECIES OR MEDICINAL PLANTS?

- **MORROW'S HONEYSUCKLE** (*Lonicera morrowii*): Although the plant is generally considered toxic to humans, it has some historical medicinal use.
- **PURPLE LOOSESTRIFE** (*Lythrum salicaria*): The plant has a long history of traditional medicinal use, primarily valued for its strong astringent and antimicrobial properties. It is commonly used to treat diarrhea, dysentery and inflammation of the gut. It is also applied topically for wound healing and skin issues. In places where the growing conditions are healthy, loosestrife does not become “invasive,” it stays fairly well balanced. But in unhealthy places, it thrives. Part of the reason is that it’s doing a job: loosestrife is one of our pollution remediator plants! Purple loosestrife can actually remove PCBs from contaminated water and soil and in fact, one study on its efficacy on the Hudson River had significant success. Plus, loosestrife can absorb excess phosphorus and nitrogen from agricultural runoff.
- **JAPANESE CRABAPPLE** (*Malus toringo*): Can be used to make jams and jellies and has high levels of antioxidants like quercetin and anthocyanins. Its fruit is used to aid digestion and reduce inflammation, while the bark has historically been used to treat fevers. It is also a rich source of vitamin C.
- **CHINESE SILVER GRASS** (*Miscanthus sinensis*): Young shoots and flowers are edible, and roots and stems have traditionally been used for detoxification. A known diuretic and anti-inflammatory, it has detoxicant properties. The juice from young stems has been used to treat poisoning. It’s a good resource for biomass and bioenergy.
- **EURASIAN WATER-MILFOIL** (*Myriophyllum spicatum*): Aquatic plant with roots that can be consumed raw or cooked (reportedly sweet and crunchy when cooked).
- **ORIENTAL PHOTINIA** (*Photinia villosa*): Traditionally used to treat gastrointestinal ailments and serve as a tonic or stimulant. Fever reducer. Research suggests antioxidant, cytotoxic and anti-cancer properties.
- **CALLERY or BRADFORD PEAR** (*Pyrus calleryana*): The bark can be used for sprains and bruises (externally) and leaves can be used as diuretic
- **COMMON BUCKTHORN** (*Rhamnus cathartica*): Powerful laxative, purgative and “cleansing” agent for rheumatism.
- **JETBEAD** (*Rhodotypos scandens*): Toxic.
- **MULTIFLORA ROSE** (*Rosa multiflora*): Considered medicinal and edible, despite its status as an invasive species in North America, its rose hips, flowers and leaves are used to support immune function, reduce inflammation, treat skin conditions and provide high levels of antioxidants and vitamin C.
- **EUROPEAN WATER CHESTNUT** (*Trapa natans*): Both highly edible and medicinal, its starchy, chestnut-like kernels are eaten raw, boiled, roasted, or ground into flour. Ayurveda and Unani medicine uses it to treat conditions like diarrhea, inflammation, sore throat and general fatigue. It contains anti-inflammatory and antioxidant properties.
- **SIEBOLD’S ARROWWOOD** (*Viburnum sieboldii*): Primarily used in traditional and folk medicine, its bark and leaves are valued for astringent properties to treat gastrointestinal issues, while some *Viburnum* species provide mild analgesic and anti-inflammatory benefits. Ripe berries are edible, and the bark can be used in tea to treat fevers and infections, relieve pain and reduce inflammation; leaves are used in poultices for minor wounds.
- **JAPANESE WISTERIA** (*Wisteria floribunda*) and **CHINESE WISTERIA** (*Wisteria sinensis*): Many oriental medicinists use wisteria gall extracts for treating gastric cancer and cancer of breast and stomach, as well as rheumatoid arthritis. The flowers are edible.
- **SERICEA LESPEDEZA** (*Lespedeza cuneata*): In East Asian traditional medicine, it is used as a diuretic, for improving circulation and for treating coughs and asthma. Its high tannin content makes it a natural anthelmintic (dewormer) for livestock.
- **RUNNING BAMBOO** (*Phyllostachys*): Various parts—including leaves, shoots and shavings—are used for their antioxidant, anti-inflammatory and antimicrobial properties to treat fever, infections and digestive disorders.

Caustic Commentary

Sally Fallon Morell takes on the Diet Dictocrats

START YOUNGER AND GET IT LOWER

The cardiologists are at it again, with new guidelines urging Americans to get their LDL-cholesterol as low as possible. New recommendations from the American Heart Association, the American College of Cardiology and nine other professional organizations especially target young people, to get them on cholesterol-lowering drugs as young and for as long as possible. “We think we could cut heart attack and stroke rates down by half,” gushes Dr. Roger Blumenthal, a cardiologist at Johns Hopkins Medical School. The guidelines call for testing LDL-cholesterol as early as age ten—can’t get them worried about heart disease too young!—and screening every five years starting around ages eighteen to twenty. Then these young people get a prescription for a statin or other cholesterol-lowering drug to get their levels down, and of course make it very hard for them to produce sex hormones during their reproductive years. Dr. Leslie Cho, a cardiologist who “consults” with makers of statin drugs, has no doubts: “If it is high, we would treat your LDL very aggressively.” Really? All of this ignores current research, such as a 2026 finding by Omar Ahmed and others in the *Journal of the American Heart Association* (and not mentioned in the abstract) which showed that all-cause mortality with statin use was highest in the group with the lowest LDL; or studies showing that statins deplete CoQ10 and vitamin K₂, both needed for healthy heart function (*Epoch Times*, July 22, 2025); or that statins aggravate insulin resistance, thereby increasing the risk for diabetes (*J Cell Metabolism*, February 6, 2024). Of course, none of these subtleties will be explained to patients whose doctors are treating LDL “very aggressively.”

PROTEIN POWDER GARBAGE

Fifteen years ago, exhibitors at the huge Natural Foods Expo were touting soy as the food of the future—soy milk, soy bars, soy burgers and soy powders. No one is promoting them now. Toxic soy has disappeared from

supermarket shelves in a fitting demise for a thoroughly bad idea. The new Expo product is protein—protein powders, protein drinks, protein meal replacements, protein added to cereals and snacks. For example, a startup called Huel (for “human-fuel”) produces plant-based meals, snacks, drinks and food supplements derived from oats, rice protein, pea protein, sunflower, flaxseed, coconut oil MCTs, vitamins and minerals, and sweetened with sucralose or stevia. The company also produces a greens powder supplement “containing antioxidants, phytonutrients, adaptogens and plant-based proteins through 91 vitamins, minerals and whole food-sourced ingredients.” These products—popular with the gym set—are touted as “complete meal replacements.” The British company had revenues of over three hundred million dollars last year and has just completed a deal with Danone for its purchase at over one billion dollars. Will the sales last for Danone? Online Huel forums contain threads of people complaining about stomach pains, flatulence and heartburn; and excess protein, particularly processed protein from foods like peas and oats, poses multiple health dangers, including vitamin A deficiency, immune dysfunction and kidney problems. No matter what happens with Danone in charge, the Huel founders are sitting pretty and will now be able to afford to eat real food like caviar and foie gras.

WE CAN BELIEVE IT’S NOT BUTTER

Another new startup, called Savor, is producing a synthetic “butter” from carbon dioxide and hydrogen. Why do we need such a product? Because “the entire process releases zero greenhouse gases, uses no farmland to feed cows, and despite its industrial appearance, has a significantly smaller footprint and . . . the land footprint is a thousand times lower than what you need in traditional agriculture,” say spokespersons for the company. “Of the 51 billion tons of greenhouse gases emitted every year, 7% is from the production of fats and oils from animals and plants, which Savor says makes their

Caustic Commentary

process the most climate-friendly option.” (No reference is given for these numbers.) Savor is proud of the fact that the product contains just a few ingredients: lab-created fat, water, an emulsifier, beta-carotene for color and rosemary oil for flavor, claiming that “it tastes like butter.” But the real question is, what does this ersatz product *not* contain? It does not contain fat-soluble vitamins A, D, E and K₂, nor gut-healing arachidonic acid, nor thyroid-supporting butyric acid, nor anti-cancer CLA, nor a host of other special compounds that butter provides. The company is marketing first to restaurants, and putting the fake butter in products like chocolates, before trying it out on supermarket shoppers. And the startup, financially supported by Bill Gates, still has a few challenges, such as getting regulatory approval in the United States (so they can call it “butter”) and reducing the price to make it affordable. We’ll be happy to see synthetic “butter” go the way of the dodo bird.

BREASTFEEDING BETTER FOR PREEMIES

Parents of premature babies often get advice to bottle-feed their babies, with nurses arguing that bottle feeding is “easier” for preemies than breastfeeding. But a recent randomized controlled trial published in 2025 in the *Journal of Pediatric Gastroenterology and Nutrition* found otherwise. Compared to bottle-fed babies, those who were breastfed had better oxygen saturation and a lower heart rate. They also took more milk! The conclusion: “Preterm infants whose oral feeding was initiated by breastfeeding with their mothers showed more favorable physiological responses and better feeding performance compared to those fed with a bottle.”

THE BUNDIBUGYO VIRUS OR 5G?

Scientists are working feverishly to test and produce a vaccine for the not-making-this-name-up Bundibugyo virus, said to be the cause of the Ebola outbreak that is raging in Congo—and reported in the newspapers with photos of people in masks and hazmat suits. According to the Oxford Vaccine Group, “Viral seed. . . will

allow us to rapidly inoculate our cell bank and begin producing vaccine doses in record time.” The vaccine will be produced in the same way as the AstraZeneca/Oxford Covid-19 vaccine (*Epoch Times*, May 27-June 2). What could possibly go wrong? The virus theory has everybody looking in the wrong direction and ignoring the most probable cause of the illness occurring in the Congo: the rollout of 5G, launched in late 2024. How the virus theory is useful to justify the crimes of big pharma and cover up dangers of the telecom industry!

COINCIDENCE?

Forrest Maready, author of *The Moth in the Iron Lung* and a new book called *The Autism Vaccine* has made an alarming discovery. The first autistic child was diagnosed in the U.S. in 1932, the same year that aluminum was first added to vaccines, namely to the diphtheria vaccine. Before that year, only a few cases exist in the scientific literature of children with a diagnosis resembling the modern diagnosis of autism. But after that, the famous child Baltimore psychiatrist Leo Kanner began to see children—mostly boys—with strange behaviors he had never seen before. Coincidence? Perhaps, but it just so happens that one other country began adding aluminum to vaccines; that was Austria, also in the 1930s. After that, another famous child psychiatrist, Hans Asperger, began seeing children with strange behavior patterns. He described more than two hundred children—again, all boys—with the same symptoms that were described by Leo Kanner in Baltimore. Both countries had nationwide vaccination campaigns in the early 1930s. Coincidence? We think not (x.com/stkirsch)!

NOT BELIEVING THE SCIENCE

“A ‘staggering’ number of people believe unproven claims about vaccines, raw milk and more.” So ran the headline of an article at nature.com (April 22, 2026) by Cambridge-educated British science journalist Helen Pearson. Referring to a recent survey, Pearson reports

Caustic Commentary

that “More than two-thirds of the public believe at least one false or unproven health claim,” such as “the risk of childhood vaccinations outweighs benefits,” or “fluoride in water is harmful,” or “raw milk is healthier than pasteurized.” People also believed that “taking paracetamol [Tylenol] during pregnancy causes autism.” The survey included more than sixteen thousand people in sixteen countries and found that a total of 70 percent of respondents believed at least one of the “claims.” According to David Bersoff, head of research at the Edelman Trust Institute, which carried out the survey, the result “blows the lid off” the idea that such beliefs are held by only a “fringe population of individuals who are uninformed or ideologically driven.” People who believed three or more of the claims were as likely to have attended university and more likely to consume health news than were those who believed fewer of them. Says Bersoff, “This challenges the assumption that people who hold such views are ill-informed.” Bersoff blames “too much information available to know what is true about science,” from social media, news and peers in real life. In other words, the monopoly on information no longer holds and once people become well informed, they are no longer likely to believe the propaganda spewing from the scientific establishment.

DNA TESTING AT BIRTH

“In Pioneering Study, Gene Technology Outperforms Standard Newborn Screening Tests.” This was the headline at the Columbia University Medical Center website (October 24, 2024) reporting on results from a study of newborn screening methods—called GUARDIAN—which “show that DNA analysis picks up many more preventable or treatable serious health conditions than standard newborn screening. . .” Among the first four thousand newborns enrolled, researchers used genome sequencing to identify one hundred twenty babies (3 percent) with “serious health conditions, only 10 of whom were identified with standard newborn screening.” In other words, using DNA analysis, they

found a lot more babies they could “treat.” Promoters are enthusiastic about this magic wand, which they assume to be gold standard science and 100 percent accurate. But if you are testing for thousands of genes associated with illness, and you get even 5 percent false positives, virtually all babies could end up with a diagnosis of a genetic disease. Then what happens? The article tells us. For one child, “detecting a rare gene variant that causes a severe immunodeficiency disorder that was missed by conventional screening resulted in a lifesaving bone marrow transplant.” In other words, a perfectly healthy baby, who might in the future have an immunodeficiency disorder, was subjected to a horrendous operation before even leaving the hospital. How many babies will be subjected to such treatment—perhaps even without parental consent—if DNA testing becomes the norm?

RED MEAT: NOT GUILTY AS CHARGED

In a new study out of Sweden, published March 19, 2026 in *JAMA Open Network*, researchers looked at a group of patients said to have a genetic risk for dementia. They were surprised to find that high meat consumption was linked to a lower dementia risk in this group. “Older people with a genetic risk of Alzheimer’s disease did not experience the expected increase in cognitive decline and dementia risk if they consumed relatively large amounts of meat,” estimated at about two pounds of meat per week. In addition, they had a 15 percent reduction in all-cause mortality. ☯☯

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 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.

Nourish to Flourish: Ancestral Principles and Bio-Individual Nutrition for Women's Hormonal Health

By Elizabeth Link, BS, BCHN, NTP

The female body is a study in hormonal complexity and rhythm. When this system is supported, women's bodies are incredibly adaptive; when it is disrupted, the consequences can be far-reaching and deserve careful examination. Unlike men, whose hormonal patterns tend to remain relatively stable, women's biochemistry is inherently dynamic, shifting across life stages and fluctuating day to day throughout the menstrual cycle.

This biological variability has been met with oversimplified, one-size-fits-all guidance that may work reasonably well for men but often fails to help women. Importantly, the impact of sex hormones extends far beyond reproduction: estrogen and progesterone play central roles in metabolic regulation, gut health, bone remodeling, brain function and cardiovascular health. As such, hormonal balance is not a niche concern but rather a foundational determinant of women's health, well-being and longevity.

In the 1930s, during his global studies of traditional societies, Dr. Weston A. Price not only documented the robust health of ancestral populations but also observed the relative ease and regularity of pregnancy and childbirth, as well as overall health and vitality, among women consuming their native diets. He described a visible contrast between women nourished by traditional foods and those increasingly affected by what he termed the “displacing foods of modern commerce.”¹ Fast forward to the modern woman—emotional burnout, stubborn weight changes, infertility struggles and metabolic illnesses have become increasingly common. A legacy of institutionalized dietary advice that lacks critical nutrients for female hormonal and metabolic stability has left many women depleted of vitality and resilience, some living with life-altering suffering driven by hormonal imbalance.

FOUNDATION FOR HORMONAL HEALTH: NOURISH THE HPO AXIS

Female clients frequently express frustration with what feels like an unfair reality: they adopt dietary interventions such as intermittent fasting, ketogenic diets applied without regard to hormonal phenotype or other highly restrictive, low-calorie, diet-and-exercise plans, only to experience outcomes that differ markedly from those of their male partners. Whereas men may see at least short-term improvements in weight, body composition and perceived energy, women often report that the same approach backfires. Common consequences include unfavorable shifts in body composition despite weight loss on the scale, worsening metabolic and hormonal markers and heightened stress responses often reflected in dysregulated cortisol on testing panels.

These sex-specific differences are largely explained by the hypothalamic-pituitary-ovarian (HPO) axis (see Figure 1)—a communication system that links energy availability (“Am I getting enough food?”), nutrient building blocks (“Am I getting adequate dietary fat, glucose and micronutrients?”) and other perceived stressors with female reproductive and metabolic function.

The key takeaway for women is that *the*

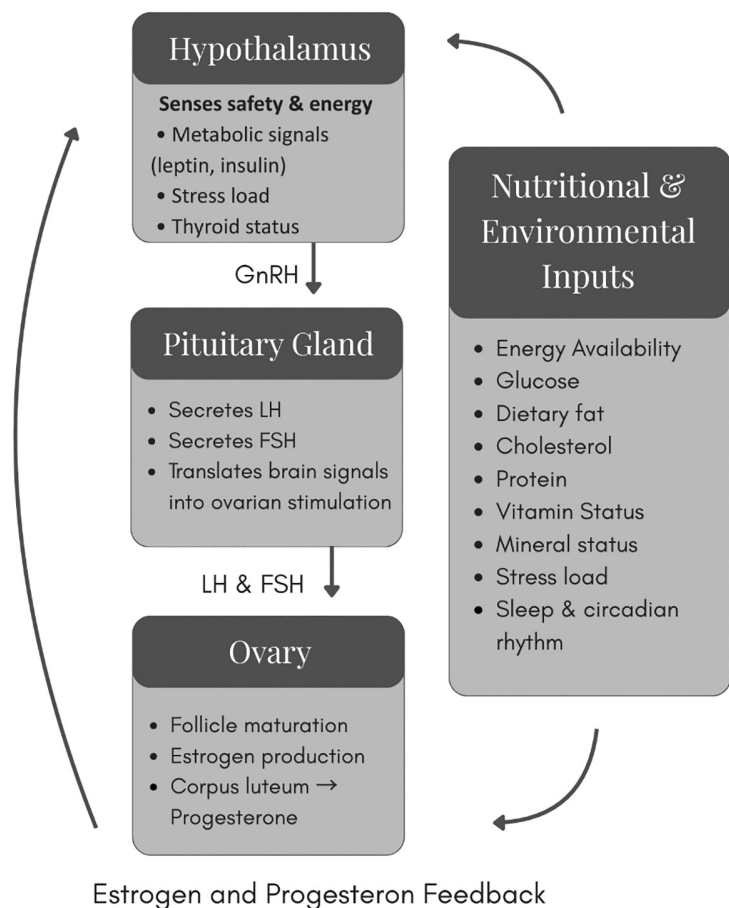
HPO axis is highly sensitive to nutritional status. Unlike the male hormonal environment, which is relatively resilient to short-term energy stress, the female HPO axis quickly shifts away from reproduction when nutrient availability is insufficient. An inadequate or imbalanced intake of calories, fat, protein, carbohydrates or key micronutrients can disrupt this communication, reduce ovulatory function and contribute to broader hormonal and metabolic disturbances.^{2,3}

THE BURDEN OF MODERN DIETS

The standard American diet—high in refined carbohydrates, inflammatory seed oils, neurotoxic monosodium glutamate (MSG) and other chemical additives—does little to support female hormonal health. With nearly half of U.S. adults estimated to fall along the diabetes–prediabetes spectrum,⁴ blanket high-carbohydrate patterns that are too low in healthy fats and adequate protein are a poor fit for metabolic vulnerability, promoting insulin resistance—the hallmark of poor metabolic health.

MSG, added to most ultra-processed foods, has been shown to damage the arcuate nucleus of the hypothalamus, a key center for appetite and energy regulation.⁵ Used as a flavor enhancer to increase palatability and reward signaling, MSG disrupts normal hunger and satiety cues, increasing the likelihood of overeating and subsequent obesity. This modern

FIGURE 1. Hypothalamic-pituitary-ovarian axis



dietary pattern quietly reshapes female hormonal signaling, promoting unfavorable sex hormone balance, disrupting appetite-regulating hormones and ultimately undermining female resilience.⁶⁻⁹

When metabolic regulation is impaired, it directly affects hormone balance. Chronically high insulin lowers sex hormone-binding globulin (SHBG), a liver-made protein that acts like a hormone buffer by controlling how much testosterone and estrogen are freely active in the bloodstream. When SHBG drops, testosterone and estrogen can rise beyond healthy ranges (see Figure 2). Excess body fat adds another layer by converting androgen hormones into estrogen. Together, these shifts can disrupt the menstrual cycle, interfere with ovulation and contribute to patterns seen in polycystic ovarian syndrome (PCOS), a condition closely tied to metabolic health.^{7,8}

TWO ENDS OF THE MODERN HORMONAL LANDSCAPE

In clinical practice, I tend to see two ends of the spectrum. On one end are women still bearing the burden of historically misguided dietary guidelines, chronically low in healthy fats and excessively high in refined grains and industrial seed oils, culminating in the ultra-processed “Frankenfoods” that now dominate the modern food supply. These women often present with features including dysregulated blood sugar, chronic low-grade inflammation and excess body fat, all of which are associated

with reduced fertility and a higher prevalence of androgen-dominant conditions such as PCOS, as well as—ironically—estrogen-dominant patterns.

On the other end of the spectrum is the highly health-conscious woman, often influenced by Instagram-era wellness trends. Combining low-fat, low-carbohydrate and low-calorie patterns can drive body fat levels below what is physiologically protective for women. Research consistently shows that body fat levels below approximately 20 to 22 percent are associated with impaired ovulation,¹⁰ increased rates of anovulatory cycles (no ovulation) and, in more severe cases, complete menstrual cessation, hallmarks of functional hypothalamic amenorrhea (FHA) and relative energy deficiency in sport (RED-S).

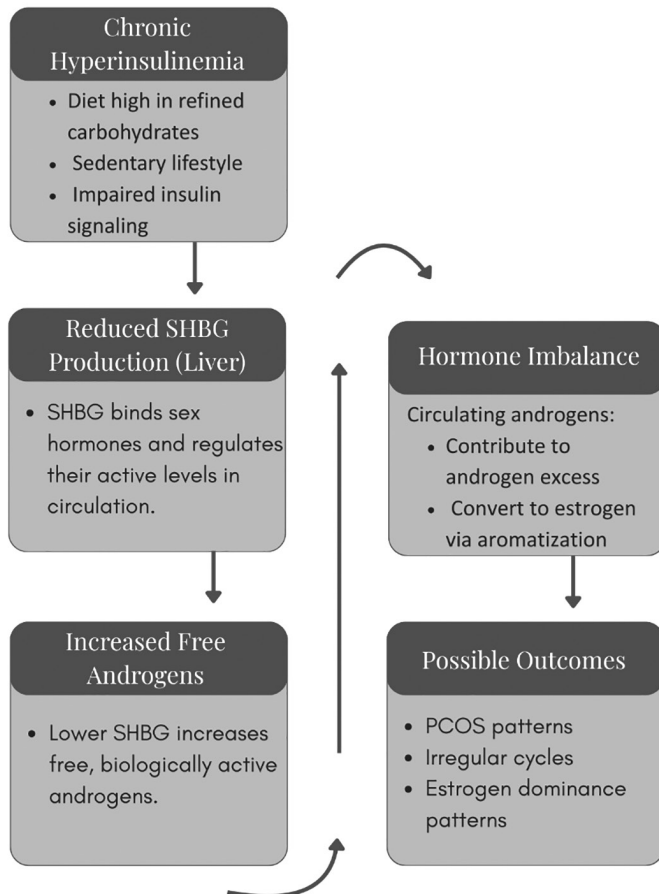
Excessively low body fat can create its own risks for postmenopausal women. After ovarian estrogen production declines, body fat becomes an important site of estrogen production and storage. Estrogen supports vascular, bone and muscle health; very low body fat may, therefore, increase risk of conditions including sarcopenia and osteoporosis through both reduced mechanical loading on bone and diminished estrogen signaling.¹¹

Women’s bodies are highly sensitive to both excesses and inadequacies in macronutrient balance—protein, fat and carbohydrate—as well as micronutrient depletion. These risks become increasingly likely when diets move away from the ancestral nutrient density so clearly documented by Weston A. Price in *Nutrition and Physical Degeneration*.¹ Thus, this article serves as a bridge between ancestral wisdom and modern understanding of female physiology as it intersects with nutrition.

MACRONUTRIENTS: MODULATORS OF CELLULAR SIGNALING

The following framework helps women adjust macronutrient intake—the balance of protein, fats and carbohydrates—to support their individual hormonal needs. Why is this necessary, one may ask? A whole-foods diet prepared according to ancestral principles is always the foundation, but most modern women are not beginning with the metabolic resilience

FIGURE 2. Insulin resistance and sex hormone imbalance



common in preindustrial societies. Decades of processed foods, environmental exposures, chronic stress, circadian disruption and epigenetic influences have left many with underlying metabolic dysfunction.

While returning to traditional, nutrient-dense foods is the bedrock, restoring hormonal balance may require thoughtful macronutrient refinement based on individual physiology. The goal is not rigid long-term tracking, but building awareness so sustainable adjustments can be made. For women unfamiliar with their baseline intake, a brief tracking period can be illuminating. Simple nutrition app tools can calculate nutrients automatically, keeping the focus on learning what balanced intake looks like in real meals.

For example, a higher-fat diet consisting of 60 percent or more calories derived from fat (Figure 3) does not inherently require meals swimming in added fats. Pasture-raised eggs cooked in butter with cheese and sauerkraut, or wild salmon with vegetables dressed with butter, can naturally fall near this range because fat provides roughly 9 kcal per gram compared with only 4 kcal per gram for protein and carbohydrates. A pattern closer to 45 percent fat, 20 percent protein and 35 percent carbohydrate (Figure 4) might center on a protein-anchored plate of meat or fish, vegetables, fruit or roots and moderate amounts of traditional fats—still abundant and satisfying.

It is worth noting that macronutrient percentages cannot be translated into exact uni-

versal food quantities because caloric needs vary widely—from roughly 1,800 kcal for a smaller, sedentary woman to over 3,000 kcal for a highly active athlete—making fixed prescriptions misleading. After gaining context, most women can return to intuitive, real-food eating guided by physiological feedback rather than numbers.

PRIORITIZING PROTEIN

Protein, derived from the Greek *proteios*, meaning “of first importance,” is a foundational component of the diet. Unlike fats and carbohydrates, which serve as primary energy sources, protein provides structural building blocks for hormones, neurotransmitters, tissues and enzymes.

Adequate protein intake supports several foundational physiological processes. Protein helps regulate appetite through production of hormones that influence satiety, and it slows digestion in a way that reduces post-meal blood sugar swings.^{12,13} Together, these effects play an important role in metabolic stability and female hormonal regulation.^{9,14}

As estrogen declines with age, particularly during perimenopause and menopause, women experience greater difficulty maintaining muscle mass. Sufficient dietary protein is, therefore, essential for stimulating muscle protein synthesis, preserving lean body mass and supporting metabolic health across the lifespan.¹⁵

Protein quality is as important as quantity. Complete proteins provide the essential amino acids needed for effective metabolic signaling. While some plant foods qualify as complete proteins, animal-derived proteins generally offer more favorable amino acid availability^{16,17}—and uniquely supply compounds such as creatine, which is increasingly recognized as relevant to female hormonal health.

Evidence from an NHANES (National Health and Nutrition Examination Survey) analysis highlights the hormonal relevance of creatine intake. Women consuming less than 13 mg/kg of body weight were 26 percent more likely to require hormone replacement therapy, 33 percent more likely to report irregular menstrual cycles, 42 percent more likely to undergo hysterectomy and 68 percent more likely to experience pelvic infection.¹⁸ These findings underscore the fact that adequate protein,



FIGURE 3
Sample nutrient-dense meal approximating 60 percent fat / 20 percent protein / 20 percent carbohydrate: Two eggs cooked in generous butter, 2-oz steak, sautéed spinach with melted butter, sauerkraut and one-half cup blueberries.



FIGURE 4
Sample nutrient-dense meal approximating 45 percent fat / 20 percent protein / 35 percent carbohydrate: 4 oz shrimp cooked in butter, one or one and one-quarter cups roasted sweet potato with melted butter, mixed greens and spinach, one-half cup sauerkraut and olive oil dressing.

ALL-STAR NUTRIENTS: LOW IN MODERN DIETS, ABUNDANT IN ANCESTRAL FOODS

While no single nutrient operates in isolation, certain micronutrients play particularly influential roles in the regulation of female physiology. Notably, many of these nutrients are commonly under-consumed in modern diets and may be inadequately emphasized within standard dietary guidance.³ In contrast, these nutrients, alongside many others, are naturally abundant in traditional, ancestral food patterns, particularly those aligned with the principles outlined by the Weston A. Price Foundation. Some key examples are highlighted below.⁴⁴⁻⁵⁶

VITAMIN A (RETINOL)—A MASTER REGULATOR OF FEMALE PHYSIOLOGY: *Rich dietary sources of preformed vitamin A include liver, shellfish, eggs, cod liver oil, grass-fed butter and full-fat dairy—foods traditionally valued in ancestral diets for supporting female health across the lifespan.*

- Supports healthy ovulation and follicle development by guiding granulosa cell growth (act like bodyguards around the developing egg—forming a protective and nourishing environment that shields it) and differentiation within the ovary.
- Antioxidant properties protect developing eggs from oxidative stress.
- Plays a role in thyroid hormone signaling and metabolic regulation.
- Supports skin health and tissue turnover.

VITAMIN D—A HORMONE-LIKE SIGNAL FOR FEMALE METABOLIC AND REPRODUCTIVE HEALTH: *Key dietary sources include shellfish, egg yolks, butter, full-fat dairy, poultry liver and lard from pasture-raised pigs—foods traditionally valued in ancestral diets but often avoided due to outdated cholesterol concerns.*

- Acts more like a steroid hormone with receptors throughout the female reproductive axis, including the ovaries, endometrium, hypothalamus and pituitary gland.
- Supports ovulatory function and hormonal signaling, contributing to more regular cycles, balanced reproductive physiology.
- Enhances insulin sensitivity and metabolic regulation, with particular relevance for women with insulin resistance or PCOS.

VITAMIN K2 (MENAQUINONE)—A DIRECTOR OF CALCIUM AND CARDIOMETABOLIC HEALTH: *While vitamin K1 is abundant in leafy green plants, vitamin K2 is found in animal and fermented foods traditionally valued in ancestral diets. Dietary sources include egg yolks, butter and full-fat dairy (especially from grass-fed animals), poultry fat and liver (particularly goose liver), aged and fermented cheeses and natto—a traditional fermented soybean food that is especially high in the MK-7 form of K2.*

- Contributes to bone strength by activating osteocalcin, which helps bind calcium into the bone matrix—especially important during periods of growth, such as adolescence when peak bone mass is established, and during hormonal transitions including menopause.
- Supports long-term cardiovascular health by helping prevent calcium from depositing in the arteries, which is particularly important for women as estrogen declines post-menopause.
- Plays a role in metabolic health, with research suggesting involvement in glucose regulation and improved insulin sensitivity.
- Works synergistically with vitamins A and D to support proper mineral metabolism and hormonal signaling.

CHOLINE—A STRUCTURAL AND METHYLATION NUTRIENT FOR FEMALE HORMONAL HEALTH: *Rich dietary sources of choline include egg yolks and organ meats, with additional contributions from shellfish, beef, poultry and fish.*

- Supports cellular structure and signaling by providing phospholipids that form the foundation of healthy cell membranes, essential for nutrient transport, hormone signaling and cellular communication.
- Supplies methyl groups critical for methylation pathways, influencing estrogen metabolism, liver detoxification and overall hormonal balance.
- Plays a role in fertility and reproductive health, with particular importance for neural tube development if conception occurs.
- Supports estrogen metabolism across the female lifespan, becoming especially relevant as endogenous estrogen production shifts in perimenopause and menopause.

HEME IRON—A FOUNDATIONAL MINERAL FOR FEMALE ENERGY AND REPRODUCTIVE HEALTH: *Heme iron from animal foods is significantly more bioavailable than non-heme iron from plant sources, which is often blocked by phytates and requires vitamin C for enhanced absorption. Rich dietary sources of heme iron include liver, red meat, shellfish and dark poultry.*

- Supports oxygen delivery and mitochondrial energy production, influencing stamina, cognitive function and overall vitality.
- Contributes to healthy thyroid hormone conversion and metabolic signaling, with low iron status often associated with fatigue and reduced metabolism.
- Plays a role in fertility and reproductive health, as adequate iron status is necessary for optimal ovarian function and pregnancy outcomes.

ZINC—A CATALYST FOR OVULATION, HORMONE PRODUCTION AND CELLULAR RESILIENCE: *Rich dietary sources of zinc include oysters, beef, lamb, poultry and eggs.*

- Serves as a critical cofactor for enzymes and structural proteins involved in female reproductive function, hormone signaling.
- Helps maintain mitochondrial function within ovarian tissue, supporting cellular energy and resilience.
- Modulates oxidative stress and inflammatory signaling, factors that can influence ovulatory quality and hormonal balance.
- Bioavailability is highest from animal foods, while plant sources are often limited by phytates that reduce absorption.

and its associated bioactive compounds, is not solely an athletic concern but a determinant of hormonal and reproductive health.

With that said, female protein needs vary across the lifespan and depend on many personal factors, including genetics, digestive capacity, activity levels and hormonal status. Protein absorption often declines with age as stomach acid decreases, a common consequence of low-grade inflammation, gut imbalance and subtle nutrient deficiencies (such as too little salt). Protein needs also shift during key life phases such as pregnancy, lactation, periods of stress or injury and through hormonal transitions like perimenopause and menopause, when changes in estrogen can reduce insulin sensitivity and accelerate lean mass loss.¹⁹⁻²¹

A practical intake range that respects bio-individual needs is approximately 1.2–1.8 g/kg (0.55–0.82 g per pound of body weight), with the higher end often being appropriate during

pregnancy, lactation, recovery from illness or injury, for those who have high exercise demands and during major hormonal transitions, where adequate protein helps preserve muscle and metabolic resilience.²² For a woman weighing one hundred sixty pounds (seventy-three kg), this equates to roughly eighty-five to one hundred thirty grams of protein per day. In practical terms, this may look like three meals daily each containing a palm-sized portion of protein-rich foods (approximately three to four ounces cooked meat, fish or shellfish, providing twenty-five to thirty grams of protein), with additional protein from eggs or dairy as needed to reach the daily total.

It should be noted that when higher protein intake is warranted, ensuring adequate vitamin A from foods such as butter, cod liver oil and liver becomes especially important to help maintain levels of this critical fat-soluble vitamin—which would be depleted with high intake

Female protein needs vary across the lifespan and depend on many personal factors, including genetics, digestive capacity, activity levels and hormonal status.

THE DYSLIPIDEMIA OF INSULIN RESISTANCE: THE DIABETIC CHOLESTEROL PATTERN

Most readers will already be aware that total cholesterol has proven to be a poor surrogate for cardiovascular risk. In fact, some evidence suggests that—particularly in older women—when total cholesterol declines, all-cause mortality may actually increase. This was one of the key observations from the well-known Minnesota Coronary Experiment (MCE), which replaced traditional saturated fats with polyunsaturated vegetable oils. In a later reanalysis of the MCE data published in *BMJ*, researchers found that for each 30 mg/dL reduction in serum cholesterol, there was a 22 percent increase in mortality risk.⁵⁷

What clinicians who focus on metabolic health often observe, however, is a distinct pattern of dysregulated lipid ratios that serves as a telltale sign of insulin resistance. This pattern is typically characterized—and apparent on a basic cholesterol test—by lower-than-ideal HDL (high-density lipoprotein) and elevated fasting triglycerides.

Why does this pattern occur? The explanation has very little, if anything, to do with dietary fat intake and everything to do with excess carbohydrate intake and the development of insulin resistance. This metabolic state is driven primarily by diets high in processed carbohydrates, compounded by inflammatory seed oils and often exacerbated by a sedentary lifestyle (exercise is a powerful sink for glucose disposal).

The ingestion of highly refined carbohydrate foods quickly raises blood glucose, and the liver works hard to convert this sugar into glycogen, the storage form of glucose. But when insulin remains high and glycogen stores become replete, the liver then uses *de novo* lipogenesis (DNL)—the creation of new fat from sugar—to turn excess glucose into fatty acids, which are then assembled into triglycerides for storage in fat tissue. Additionally, insulin itself acts as a signal for DNL, and thus the hyperinsulinemic state seen in metabolic syndrome is like a switch constantly flipped to the “on” position, even in a fasted state. These triglycerides tend to transfer onto HDL particles, making them unstable and more rapidly cleared by the liver—hence the reliably predictable pattern of elevated triglycerides and lowered HDL. It is, therefore, plausible that the reason many studies have found an association between higher HDL and lower cardiovascular risk in women has much to do with its representation of strong metabolic health—marked by healthy glucose and insulin metabolism—and its favorable impact on inflammatory status.⁵⁸

While the standard triglyceride reference range is under 150 mg/dL, metabolically focused practitioners usually prefer to see fasting triglycerides under 100 mg/dL. For women, an HDL level above 60 mg/dL is often considered a sign of strong metabolic health. And how does one improve HDL and triglyceride levels? By focusing on the advice outlined in this article: consuming healthy fats, including saturated fats and natural sources of omega-3 oils; removing ultra-processed foods from the diet; maintaining healthy body fat levels—neither too high nor too low; and engaging in exercise one enjoys to help metabolize glucose.

Decades of low-fat dietary guidance have coincided with rising metabolic dysfunction that profoundly disrupts female hormonal health.

of lean protein sources as opposed to protein balanced with adequate animal fats—needed for robust metabolic and hormonal health.

At the same time, more is not always better. The current trend toward *very* high protein intakes (often at or above 2.0 g/kg or 0.9 g per pound indiscriminately) can unintentionally crowd out other nutrient-dense foods, especially when protein is obtained primarily from powders or highly processed products rather than whole foods. This may reduce intake of key minerals and fat-soluble vitamins that are essential for long-term hormonal health.

Additionally, historical accounts from indigenous populations of the Canadian Arctic and Alaska, as well as explorers and fur traders of the late nineteenth and early twentieth centuries, described a condition termed *rabbit starvation*. This occurred when diets relied heavily on very lean wild game without sufficient dietary fat or carbohydrate. Individuals consuming this pattern developed nausea, profound fatigue, loss of appetite and signs of physiological starvation despite consuming large quantities of meat.²³

This phenomenon, a state of functional ammonia toxicity, is a consequence of relying on protein as a primary energy source in the absence of adequate fat or carbohydrate. When protein is used for fuel rather than for structural and functional roles, its nitrogen must be removed and converted to urea in the liver through the urea cycle. This process has a finite capacity. Very high intakes of lean protein increase the nitrogen load placed on the liver, and when elimination cannot keep pace, the constellation of symptoms described historically can emerge.²³ For this reason, it is very important to pair muscle meats with natural fats such as butter and cream, and collagen-rich foods such as bone broth, skin-on meats and connective tissue cuts, thus helping balance amino acid intake, support metabolic processing, and promote long-term resilience.

WHY FATS MATTER FOR FEMALE PHYSIOLOGY

Decades of low-fat dietary guidance, despite limited evidence of cardiovascular benefit, have coincided with rising metabolic dysfunction that profoundly disrupts female hormonal

health.^{4,6,24} Dietary fats are essential for the production of sex hormones and their precursors, including estrogen, progesterone, DHEA and testosterone, synthesized from cholesterol via the parent hormone pregnenolone. Evidence shows that insufficient fat intake impairs female hormone function. A recent systematic review found that lower-fat diets were associated with a higher risk of bone stress injuries in women, likely reflecting reduced estrogen production resulting in impaired bone remodeling.²⁵ Earlier feeding studies, which often restricted fat further than more contemporary studies looking at fat intake and hormone production, similarly demonstrated reductions in circulating estrogen, progesterone and luteinizing hormone with low-fat diets.^{26,27}

Dietary fat supports metabolic stability by slowing digestion and helping keep post-meal blood sugar steady, which in turn supports insulin sensitivity and healthy HPO axis signaling. Fat is also essential for the absorption of fat-soluble vitamins (A, D, E and K2) and essential fatty acids, which play key roles in immune function, inflammation balance and ovarian and endometrial health.²⁸

For women, fat quality matters as much as fat quantity because ovarian and hypothalamic signaling are highly sensitive to inflammatory inputs. Industrial seed oils are a relatively recent addition to the human diet, becoming widespread in the early twentieth century with the rise of hydrogenation and shelf-stable fats such as Crisco.²⁹ Although industrial *trans* fats have largely been removed from the food supply—due in large part to the pioneering work of Dr. Mary Enig—non-hydrogenated polyunsaturated seed oils remain ubiquitous in modern diets.³⁰ In female physiology, these pro-inflammatory fats promote conditions in which inflammation plays a central role, such as PCOS and excessive menstrual pain and cramping. Inflammation can also disrupt how the body processes estrogen, shifting it toward less favorable pathways, sometimes referred to as “dirty” estrogen metabolites. This imbalance is often linked to stronger PMS symptoms, stubborn weight gain and mood swings.³¹

Prioritizing ancestral, minimally processed fats (such as grass-fed butter, pastured animal

fats like tallow and lard, olive oil, avocados and traditional tropical oils), while eliminating seed oils high in omega-6, is critical for supporting women's hormonal and metabolic health.²¹ During the luteal phase, metabolic signaling shifts toward greater fatty acid oxidation, and insulin sensitivity temporarily decreases.^{32,33} For this reason, some women feel and function better with an increase in dietary fat during the second half of the cycle.

For many women, a practical lower threshold for dietary fat intake may fall to around 45 to 50 percent of total calories. This level supports hormone production and ensures adequate intake of fat-soluble vitamins, while still allowing sufficient protein and whole-food-based carbohydrates to sustain thyroid function and reproductive stability.

In practice, the women who do well on fat intakes below 45 percent—and *they are the exception rather than the rule*—are typically highly insulin sensitive, with excellent metabolic and gut health, relatively low stress levels and high activity demands that often require ready access to glycogen stores provided through higher carbohydrate intake.

In the context of insulin resistance, blood sugar instability and PCOS, higher fat intakes (often 60 percent or more within a well-formulated low-carbohydrate approach) may be particularly effective for stabilizing blood sugar, reducing excess androgen (including testosterone) production and supporting the menstrual cycle.^{9,34}

CARBOHYDRATES AND FEMALE HORMONAL PHYSIOLOGY

Carbohydrates—sugars and starches used for readily available energy—may be the most “Goldilocks” of the three macronutrients. Both excess and inadequate intake can carry meaningful metabolic and sex-hormone consequences for women. Accordingly, carbohydrate intake should be individualized to a woman's personal carbohydrate threshold—the level that supports micronutrient sufficiency, gut function and hormonal balance, while remaining below the threshold that promotes blood sugar dysregulation.

Whole-food carbohydrate sources con-

tribute not only glucose but also vitamins, minerals, phytochemicals and dietary fiber that supports the gut microbiome, including the estrobolome—the subset of microbes involved in estrogen metabolism in part via β -glucuronidase activity.³⁵ Dietary fiber from whole-food carbohydrate sources is also associated with improved blood sugar stability and more favorable lipid profiles.³⁶

Although carbohydrates are not technically essential, small-to-moderate intakes may play a regulatory role in female endocrine signaling. Very low-carbohydrate or ketogenic diets have been shown to reduce circulating free T3, the active thyroid hormone, particularly in the context of low-calorie diets.³⁷ While this may reflect adaptive signaling rather than overt hypothyroidism, reduced thyroid output is known to suppress hypothalamic activity and thus may negatively impact the menstrual cycle in susceptible women. This underscores biochemical individuality: women with lower thyroid output, low or borderline low body fat or higher energy demands may benefit from slightly higher whole-food carbohydrate intake, while those with excess body fat, insulin resistance or PCOS often fare better with carbohydrate restriction, commonly less than 20 percent of total energy intake.³⁸

CARB CAUTIONS: ENERGY AVAILABILITY AND METABOLIC CONTEXT

Indiscriminate promotion of high-carbohydrate diets to “support hormones” is no more appropriate than universal carbohydrate restriction. When carbohydrate intake exceeds an individual's personal carbohydrate tolerance, the resulting poor blood sugar control can create hormonal imbalance. In a prospective study of nearly eight hundred women attempting to conceive, even mildly elevated “high-normal” blood glucose levels were associated with lower conception probability per cycle and longer time to pregnancy.³⁹

Very high-carbohydrate patterns, especially when applied to an insulin-resistant individual, may also provoke reactive hypoglycemia, triggering compensatory cortisol release which can dampen reproductive function.^{40,41} Insulin sensi-

When carbohydrate intake exceeds an individual's personal carbohydrate tolerance, the resulting poor blood sugar control can create hormonal imbalance.

Women rarely experience hormonal imbalance in isolation.

tivity fluctuates across the menstrual cycle and declines during the second half (luteal phase), making carbohydrate quality of utmost importance.^{32,42} Carbohydrates should be drawn from whole-food, ancestrally appropriate sources (with proper preparation of grains and legumes when consumed) and balanced with fat and protein to limit excessive blood sugar swings.

Metabolically healthy, moderately active women may thrive at 30 to 45 percent of calories coming from carbohydrates, while athletic women with high training demands may even require 45 to 55 percent. Still, for reproductive-aged women, during the luteal phase, when fat is more readily used for fuel and blood sugar control declines slightly, prioritizing fat and protein while including smaller amounts of high-quality carbohydrates can help stabilize blood sugar while still providing enough carbohydrate to support the monthly building of the endometrial lining, a glycogen-rich tissue.⁴³

For metabolically compromised or sedentary individuals, carbohydrate intake around 20 to 30 percent of total calories often supports metabolic improvement. More therapeutic ketogenic approaches (less than 15 to 20 percent or less than 50 g per day) can offer additional benefit in some PCOS phenotypes. In practical food terms, keeping carbohydrate intake under fifty grams per day would allow for ap-

proximately one modest serving of traditional starch (such as one medium sized potato or one to two slices of properly prepared sourdough bread), which would comprise the majority of the daily carbohydrate allotment. However, individuals with more severe insulin resistance may not experience optimal blood sugar stability with concentrated starches and may instead tolerate considerably larger volumes of low-glycemic carbohydrates—such as several cups of leafy greens, properly prepared cruciferous vegetables, zucchini, carrots, berries or other non-starchy produce—within that same carbohydrate range.³⁸

COMMON HORMONAL DISRUPTION PATTERNS

Women rarely experience hormonal imbalance in isolation. Instead, patterns of metabolic stress, under- or over-fueling, environmental burden and lifestyle strain can disrupt the HPO axis in predictable ways. Functional testing (see Table 1) does not replace clinical judgment, but it can help illuminate the physiological drivers behind symptoms.

In the following sections, I describe three common hormonal disruption patterns along with the testing categories that often provide insight, and nutrition and lifestyle interventions that can help to reestablish hormonal balance.

TABLE 1. Functional testing options

CATEGORY	TESTING OPTIONS	PHYSIOLOGICAL INSIGHT
HORMONAL	DUTCH (Dried Urine Test for Comprehensive Hormones) panel and/or serum sex hormone panel - Sex hormone profile (estrogen, progesterone, testosterone, SHBG) - Adrenal function (free cortisol, cortisone, DHEA-S)	Sex hormone balance Adrenal signaling Ovulatory function Hormone metabolism and clearance
METABOLIC	- Fasting insulin - Fasting glucose/HbA1c - Standard cholesterol profile - Advanced lipid particle analysis - Inflammatory markers (hs-CRP, homocysteine)	Insulin signaling Glucose regulation Cardiometabolic health Inflammatory burden
GUT FUNCTION	GI-MAP or comprehensive stool testing - Microbial balance markers - Digestive function indicators - Intestinal inflammatory markers	Microbiome balance Gut infection Digestion Gut inflammation Hormone recycling and detoxification pathways Pancreatic enzyme function

1. Estrogen dominance and imbalance
2. Polycystic ovary syndrome and the metabolic syndrome connection
3. Functional hypothalamic amenorrhea

**CASE ONE—EMILY:
THE METABOLICALLY STRESSED WOMAN
(ESTROGEN DOMINANCE AND IMBALANCE)**

Estrogen, particularly estradiol (E2), is a critical hormone during the reproductive years, facilitating female sexual development, conducting the orchestra of monthly follicle development and playing an all-star role in metabolic, bone and brain health. Yet excess estrogen, unfavorable estrogen metabolite patterns or a relative imbalance between estrogen and progesterone can disrupt this finely tuned system, creating a wide range of symptoms.³⁵ This pattern, often referred to as “estrogen dominance,” is multifactorial in origin and increasingly common in modern women.⁵⁹

Emily was a thirty-eight-year-old mother of three who came to me frustrated by steady midsection weight gain over the previous few years. Despite approaching her forties, her PMS symptoms seemed to worsen rather than improve. She experienced recurring headaches, anxiety throughout her cycle and increasingly painful breast tenderness. Sleep had become a nightly struggle. Emily often lay awake for hours, only to rise before her five o’clock alarm to “burn calories” at the gym.

Emily felt she was eating healthfully, choosing lowfat cereals, skinless meats and non-dairy creamers, yet she frequently craved sugar and relied on caffeine to get through the day. Her typical diet before intervention was as follows:

- Breakfast: Cereal with skim milk and orange juice
- Snacks: Pretzels or fruit
- Lunch: Chicken salad with romaine lettuce and canola oil dressing
- Dinner: Whole wheat pasta with store-bought sauce (high in seed oils)
- Beverages: Multiple caffeinated diet sodas throughout the day

Emily’s environment further contributed to her hormonal burden. She regularly used plug-in air fresheners, scented dryer sheets and plastic food containers—sources of endocrine-

disrupting chemicals that can increase estrogenic load. Her high-stress job likely compounded hormonal imbalance by suppressing progesterone production and elevating cortisol. Table 2 shows Emily’s key test findings.

Emily’s nutritional plan (Table 3) emphasizes metabolic stability, adequate protein and traditional fats alongside whole-food carbohydrates to support blood sugar regulation, estrogen clearance and HPO-axis resilience. The plan follows a moderate, protein- and fat-anchored pattern (approximately 55 percent fat, 20 percent protein, 25 percent carbohydrate) within approximately two thousand calories per day.

Maintaining a healthy body weight is important for estrogen dominance, as excess adiposity can increase estrogen production in fat cells. Traditional nutrient-dense foods support Phase I and II liver detoxification required for estrogen conjugation (preparing estrogen for elimination), while traditionally fermented foods help nourish the estrobolome—the gut microbial component involved in regulating estrogen metabolism and circulation.

As for beverages, kombucha can be a particularly useful addition, providing glucuronic acid along with other organic acids and microbial metabolites that support liver clearance pathways and healthy estrogen elimination. Beet kvass is another traditional beverage that can be especially supportive, as it contains betaine, which aids Phase II liver detoxification, along with compounds that gently promote bile flow, both important for effective estrogen metabolism and clearance.

Emily worked hard to implement the recommended dietary changes—as well as making key

TABLE 2. Key test findings: Emily

CATEGORY	TESTING RESULTS and PHYSIOLOGICAL INSIGHT
HORMONAL	Elevated total estrogen with unfavorable metabolite balance—suggesting impaired estrogen clearance Elevated cortisol with low progesterone—consistent with stress-related hormone disruption Mild androgen elevation—contributing to increased estrogen activity
METABOLIC	Elevated fasting insulin with borderline HbA1c—indicating early insulin resistance Reduced SHBG and elevated hs-CRP—reflecting increased free hormone activity and low-grade inflammation
GUT FUNCTION	Increased beta-glucuronidase and signs of digestive dysregulation—promoting estrogen recirculation and systemic inflammation

lifestyle upgrades—and within a few months she reported reduced anxiety, improved PMS severity and that her clothes fit better despite lower-intensity workouts. She also slept more soundly with fewer awakenings.

CASE 2—JENNIFER:
THE INSULIN-RESISTANT, ANDROGEN-DOMINANT WOMAN
(PCOS AND THE METABOLIC SYNDROME CONNECTION)

PCOS affects an estimated 8 to 15 percent of women worldwide and is one of the most common causes of female hormonal dysfunction.⁶⁰ It is a leading contributor to irregular or absent menstrual cycles, infertility and a broad range of metabolic disturbances, including insulin resistance, prediabetes and type 2 diabetes, dyslipidemia, hypertension, obesity and increased long-term risk for cardiovascular disease and cognitive decline.⁶¹

Jennifer had long sensed that something was “off” with her hormones, even though she had never received a clear diagnosis of PCOS. She did not meet the classic ultrasound criteria for ovarian cysts, a common experience among women with PCOS, but her body was sending consistent signals that something deeper was out of balance. Over time, Jennifer noticed thinning hair at her temples, increased facial hair, and persistent acne along her chin that worsened before her period. She also struggled with stubborn midsection weight gain, low energy and a sense that her body was no longer responding the way it once had. During her annual wellness exam, her doctor noted rising blood sugar levels and less-

than-ideal cholesterol ratios (high triglycerides and low HDL), further confirming Jennifer’s concerns.

Jennifer worked as a nurse in a fast-paced hospital environment, often pushing herself through long shifts with little time for rest or regular meals. Her irregular schedule disrupted her sleep and circadian rhythm, while chronic stress and reliance on convenience foods quietly compounded her hormonal and metabolic strain. She had no consistent exercise routine and assumed that the physical demands of her job were enough to sustain her health. Her typical diet before intervention was as follows:

- Breakfast: Often skipped; a sweetened coffee on the way to work
- Snacks: Processed snack foods, sugary drinks, occasional fruit
- Lunch: Café meals such as pizza, burgers or salads with industrial seed-oil dressings
- Dinner: Prepackaged meals or fast-food options after long, demanding shifts

TABLE 3. Emily’s nutritional plan

MEAL	FOODS and AMOUNTS	PHYSIOLOGICAL PURPOSE
Breakfast	Estrogen clearance smoothie: • 1 cup whole raw milk • 2 raw egg yolks • 1 Tbsp soaked ground flaxseed • ½ cup frozen berries • 1 tsp honey • Pinch sea salt	Supports liver methylation (choline, B6, B12) and bile flow for estrogen detoxification, while flax lignans help modulate estrogen activity and promote its clearance.
Mid-morning snack	• 1 oz liver pâté • 3 small traditionally prepared crackers (or a thin slice of sourdough) • Pickles or other fermented vegetables	Provides vitamin A critical for liver detoxification and antioxidant protection, while fermented foods support the estrobolome and healthy gut-mediated estrogen clearance.
Lunch	• 5 oz chicken thighs • 1 cup roasted potatoes with 1 Tbsp butter • Steamed broccoli with 2 tsp olive oil	Supplies iron, zinc and protein (amino acids) for liver detoxification (critical for estrogen clearance), while cruciferous vegetables provide key nutrients in estrogen breakdown.
Afternoon snack	• 1 oz raw cheese • 1 medium apple	
Dinner	• 4 oz wild salmon • 1 cup cooked white rice cooked in bone broth reduction • ½ cup mixed vegetables w/ 1 Tbsp butter	Provides omega-3 fats to modulate inflammation and balanced macronutrients to reinforce leptin (satiety hormone) and insulin rhythms tied to ovulatory health.
Optional evening nourishment	• 1 cup raw whole milk	Supports parasympathetic activation (progesterone/estrogen balance), sleep quality, and nighttime endocrine balance without creating hypoglycemic stress.

A hormone panel revealed elevated free testosterone, low SHBG and low progesterone. Her menstrual cycles were irregular and often stretched beyond thirty-five days, reflecting disrupted ovulatory rhythms and hormonal signaling (see Table 4).

Jennifer’s nutritional plan (Table 5) uses a lower-carbohydrate, higher-fat approach (approximately 70 percent fat, 20 percent protein, 10 percent carbohydrate) within an approximately two thousand kcal per day intake to improve insulin signaling and help reduce androgen excess.

Stabilizing blood glucose and lowering diet-driven inflammation are central to restoring metabolic flexibility, as these factors directly influence insulin dynamics and ovarian androgen production in insulin-resistant women. This macronutrient pattern emphasizes nutrient-dense fats and adequate protein to promote satiety and hormonal stability while minimizing glycemic (blood sugar) volatility that can perpetuate hyperinsulinemia and PCOS-related symptoms.

As for beverages, homemade bone broth is an ideal beverage for a female with PCOS and/or insulin resistance. It provides amino acids that support the synthesis of key metabolic-regulating hormones (including insulin, leptin and glucagon), along with bioavailable minerals that help nourish and restore metabolic function. The addition of sea salt helps maintain electrolyte balance, *which can take time to reestablish when transitioning to a lower-carbohydrate approach.*

Jennifer soaked up all the information she could to understand how her processed foods

diet was creating insulin resistance, which was worsening her hormonal imbalance. After following the recommended interventions, she happily reported that her lipid ratios (specifically HDL-to-triglyceride balance) and blood sugar parameters were much improved on her next wellness exam. Additionally, she felt more energized throughout the day and had improved her body composition.

CASE 3—OLIVIA: THE UNDER-FUELED, HIGH-PERFORMING WOMAN (FUNCTIONAL HYPOTHALAMIC AMENORRHEA)

Functional hypothalamic amenorrhea (FHA) is one of the clearest examples of a disturbance within the HPO axis. It is diagnosed when menstruation ceases completely for three to six months and is considered a diagnosis of exclusion, meaning other causes (such as PCOS, hypothyroidism, pregnancy and structural abnormalities) must first be ruled out. Of note, many women experience partial hypothalamic suppression, irregular or anovulatory cycles without complete amenorrhea, which may affect a significant proportion of active or dieting women.⁶²

Olivia, a former college athlete, came to me with concerns that had gradually become impossible to ignore: hair loss, anxiety, persistent fatigue, poor exercise recovery and ongoing digestive issues, all despite following what she believed was a very healthy lifestyle. As we explored her history more deeply, Olivia told me that her menstrual cycles had become infrequent, sometimes disappearing for months at a time. Her years as a competitive swimmer had shaped a mindset of discipline and endurance, where pushing through physical strain felt normal rather than problematic.

Olivia maintained a high level of physical activity but underestimated the physiological cost of chronic training combined with restricted food intake. Her identity as an athlete and her exposure to cultural messaging around leanness and discipline reinforced patterns of under-eating and over-exercising. Psychological stress, performance pressure and fear of weight gain further compounded hypothalamic suppression (Table 6).

A closer look at her diet revealed chronically low caloric intake, a strong emphasis on lowfat foods and an unusually high fiber intake. While high fiber can be helpful in cases of estrogen excess, it can further suppress estrogen signaling in women already at risk for FHA. In Olivia’s case, her nutritional pattern was quietly reinforcing an under-fueled physiological

TABLE 4. Key test findings: Jennifer

CATEGORY	TESTING RESULTS and PHYSIOLOGICAL INSIGHT
HORMONAL	Elevated testosterone with reduced SHBG—increasing bioavailable androgens Low progesterone—consistent with disrupted ovulation Elevated cortisol with circadian dysregulation—reflecting chronic stress burden Less favorable estrogen metabolite balance—suggesting impaired hormone clearance
METABOLIC	Elevated fasting insulin with rising HbA1c—indicating insulin resistance and impaired glucose regulation Dyslipidemia with elevated triglycerides, low HDL and inflammatory signaling (hs-CRP)—indicating insulin resistance and cholesterol trafficking dysfunction
GUT FUNCTION	Microbial imbalance with low-grade intestinal inflammation—reinforcing insulin resistance and hormonal disruption

state. Her typical diet before intervention was as follows:

- Breakfast: Often light or delayed; low-calorie foods such as fat-free yogurt with fruit
- Snacks: High-fiber foods such as fruit and veggies without an added fat or minimal intake between meals
- Lunch: Large salads, lean proteins, lowfat meals
- Dinner: Modest portions with limited dietary fat and carbohydrates

Overall, Olivia’s diet appeared “clean” and nutrient-conscious but was insufficient in total energy, fat, carbohydrate and micronutrients to meet her metabolic and activity demands.

Olivia’s nutritional plan (Table 7) prioritizes energy availability through a higher-calorie intake (about twenty-five hundred kcal/day) and a balanced macronutrient pattern (approximately 45 percent fat, 20 percent protein, 35 percent carbohydrate) to help restore menstrual signaling and overall metabolic safety. Establishing metabolic safety is key to recovering from impaired HPO-axis signaling, as seen in FHA and other menstrual irregularities such as anovulatory cycles and oligomenorrhea.

While dietary fat is essential for steroido-

genesis—the production of sex and adrenal hormones—adequate room is intentionally made for moderate carbohydrate intake to ensure consistent glucose signaling to the hypothalamus, support thyroid hormone recovery (as glucose facilitates T4-to-T3 conversion) and allow for a modest increase in body fat, which is often necessary to help an FHA patient rise above about 22 percent body fat.

Whole raw milk is an ideal beverage for a female with FHA, as it supports hypothalamic safety by delivering a balanced combination of energy, fat, protein and carbohydrate that signals adequate fuel availability to the HPO axis. It also provides critical nutrients, including fat-soluble vitamins and calcium, that help restore bone mineral density, which is negatively impacted by menstrual disruption.

When Olivia began to understand that menstrual suppression can affect not only fertility but also bone health, cardiovascular function, mood and energy, she realized that her symptoms were not isolated issues but signals from a body in need of restoration. Within three months of intervention, Olivia had reduced anxiety symptoms, increased hair growth and, most importantly, a restored menstrual cycle.

PUTTING IT ALL TOGETHER

In summary, modern food environments present women with many hormonal challenges. Returning to ancestral nutrition principles, so clearly articulated in the work of Dr. Weston A. Price, alongside thoughtful macronutrient balance grounded in modern physiology, offers a practical and empowering framework for hormonal restoration. This foundation helps correct common disturbances and supports a return to balance and resilience.☯☯

Elizabeth Link is a nutrition lead for the National Nuclear Security Administration (NNSA) Human Factors Laboratory (HFL), where she supports

TABLE 5. Jennifer’s nutritional plan

MEAL	FOODS and AMOUNTS	PHYSIOLOGICAL PURPOSE
Breakfast	• 2 pastured eggs scrambled in 1-2 Tbsp butter • 1 oz liver pâté • ½ cup whole-milk kefir	Fat/protein-anchor creates lower insulin demand and provides cholesterol and fat-soluble vitamins for hormone signaling.
Lunch	• 5 oz wild salmon (or sardines/mackerel) • Mixed greens and cucumber with 1½ Tbsp olive oil + vinegar dressing • 1/3 cup sauerkraut	Provides stable energy, omega-3 fats to balance inflammatory cascade and fermented foods to support gut and metabolic health.
Dinner	• 5 oz ribeye (or lamb shoulder/ fatty ground beef) • 2 cups non-starchy vegetable medley with 2 Tbsp melted butter	Maintains high fat intake while supplying complete protein, fat-soluble vitamins and minerals without excessive carbohydrate exposure.
Carbohydrate allocation (choose one)	• ½–¾ cup blueberries with 2 Tbsp raw cream OR • ½ medium sweet potato w/ 1 Tbsp butter	Provides a small amount of whole-food carbohydrate while protecting blood sugar balance (a challenge for insulin-resistant women).
Optional evening nourishment	• 1 oz cheese OR • 1 cup bone broth with sea salt	

human performance initiatives within the federal sector. She is also the founder of Elizabeth Link Wellness, a private practice based in Denver, where she works with a wide range of clients, with a particular focus on women's cardiometabolic, hormonal and digestive health. Elizabeth holds a degree in clinical nutrition, is board certified in holistic nutrition, and is a nutritional therapy practitioner (NTP). She is currently completing a Master's degree in functional medicine and human nutrition.

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TABLE 6. Key test findings: Olivia

Note: Among athletes, this presentation is often classified as Relative Energy Deficiency in Sport (RED-S).

CATEGORY	TESTING RESULTS and PHYSIOLOGICAL INSIGHT
HORMONAL	Suppressed estradiol and progesterone with reduced FSH and LH—consistent with hypothalamic suppression of ovulatory signaling Low testosterone and adaptive thyroid downregulation—reflecting metabolic conservation in response to nutrient scarcity
METABOLIC	Very low fasting glucose and very low HbA1c—reflecting chronic under-fueling and energy deficiency Excessively low cholesterol levels—limiting substrate availability for sex-steroid hormone production
STRESS AND CIRCADIAN PATTERN	Dysregulated cortisol rhythms and absence of normal ovulatory temperature patterns—indicating chronic stress adaptation and incomplete reproductive signaling

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TABLE 7. Olivia's nutritional plan

MEAL	FOODS and AMOUNTS	PHYSIOLOGICAL PURPOSE
Breakfast	• 2 pastured eggs cooked in 1 Tbsp butter • 2 slices bacon • 1 slice sourdough with 1 Tbsp butter • ¾ cup berries	Provides early carbohydrate, fat and protein to lower morning cortisol, improve leptin signaling and support hypothalamic reactivation.
Mid-morning snack	• ¾ cup full-fat yogurt with 1 tsp honey • 1 small banana	Prevents energy (glucose) dips that suppress hypothalamic signaling while supplying carbohydrates for thyroid and HPO recovery.
Lunch	• 4 oz grass-fed beef • 1 cup roasted sweet potatoes • 1 cup cooked vegetables with 1 Tbsp olive oil or butter	Replenishes protein and glycogen and provides iron, zinc and cholesterol required for ovarian hormone synthesis.
Afternoon snack	• 1 cup bone broth • 1 medium size piece of fruit • 2 oz liver pâté on 3-4 crackers	Combines collagen, carbohydrates and vitamin A to support, repair and reinforce the energy signal required for hypothalamic recovery.
Dinner	• 4 oz wild salmon • ¾ cup white rice cooked in bone broth reduction • Cooked greens of choice w/ 1 Tbsp butter	Balanced macronutrients stabilize insulin and leptin rhythms necessary for restoration of ovulatory function.
Optional evening nourishment	• 1 cup raw whole milk	Supports serotonin and melatonin production, lowers nighttime cortisol, and reinforces recovery signaling.

Light, Sleep and Longevity: Reclaiming Your Circadian Rhythm in a Modern World

By Thaddeus Owen

Have you ever had a problem falling asleep at night? Do you know someone who has lost a lot of weight only to gain it right back? Do you know someone who has had cancer? All of these conditions and more¹—diabetes,² heart disease,³ obesity,⁴ infertility⁵—are related to our light environment and, notably, to exposure to the wrong type of light at night. The synthetic junk light (what I call “weapons of mass illumination”) that we’ve installed everywhere—from screens to overhead lights—is affecting our biology.

As T.S. Wiley described in her excellent 2000 book titled *Lights Out: Sleep, Sugar, and Survival*,⁶ the National Institutes of Health (NIH) has known about the light-health connection⁷ for decades—but never told us. When someone once suggested that the American public deserves to know this information, the NIH director’s response was, “Sure, but nobody’s ever going to turn out the lights.” The fact is, though it might be ideal to turn out the lights after dark, there are also other workable solutions to fix your sleep and health—and maybe even live longer.

Artificial light was never designed to work with our biology.

Numerous studies carried out in recent years have shown that people who get more exposure to sunlight live longer—they die less from all causes than people who get less sunlight.⁸ That is powerful information when you think about the fact that most of us spend 95 percent of our time indoors under “ultraprocessed” light that was never intended to mimic nature. In fact, indoor light encourages us to work longer into the night (or all night long, if you work a second or third shift). Spending more time outside may help you live longer, but in addition, you can mitigate the indoor light environment where you spend most of your time. The purpose of this article is to describe some of the practical strategies readily available to you.

INSOMNIA AND ANXIETY RESOLVED

With a background in chemical engineering, I spent ten years as a research scientist in a pharmaceutical research lab. At the time, I thought I was doing meaningful work. At a certain point, however, I was designing the manufacturing process for a pharmaceutical product for children, and I had to teach the production people how to make it. There I was, pouring in a fifty-five-gallon drum labeled with a skull-and-crossbones and cancer warnings, wearing a protective “bunny suit” and a respirator—all for a product that was supposed to help kids—and I realized, “I cannot do this anymore.” I decided to get my master’s in holistic nutrition. (One of the courses was on Dr. Weston A. Price—and the textbook was *Nourishing Traditions*.)

For over sixteen years, I had suffered from significant insomnia and social anxiety. I tried everything to fix these issues, ranging from taking sleep aids to counting backwards from one hundred by fours. But none of the tools or techniques I tried solved the problem or answered the question of why I couldn’t sleep.

According to the most recent National Center for Health Statistics data, 30 percent of American adults have used sleep aids (prescription medications, over-the-counter medications or supplements, or cannabis products) to help them sleep,⁹ while 20 percent use sleep aids regularly.¹⁰ Moreover, only 55 percent of adults wake up feeling well-rested most days or every day.¹¹ Not only do sleeping pills have side ef-

fects, they aren’t addressing the underlying problem.

When I started doing some research, I discovered many published studies about our light environment. I learned that the NIH has coined the term “artificial light at night” (the acronym is ALAN) and knows of its association with negative outcomes, such as trouble getting to sleep. Referring to blue light (the wavelengths that are beneficial during daylight hours but disruptive at night), Harvard Medical School even published an article in 2024 titled “Blue light has a dark side.”¹²

Nobody had ever told me that our light environment affects our biology. After I decided to make some changes, I not only started to get better sleep but experienced improvements in other areas of my life. For example, working in the pharmaceutical lab, I had never been comfortable giving presentations. After I began experimenting with my light environment and solved my sleep problem, I got a new job, started teaching others and began appearing on major podcasts,¹³ even giving a TEDx talk.¹⁴

How did I achieve better sleep? I put on a pair of blue-light-blocking glasses and made other simple changes described in this article, most of them low-cost or free. My research and personal experiences have persuaded me that our light environment is the first thing we need to fix, and then diet and exercise can follow. Any steps you take toward better health are going to work far better if you first eliminate the negative things in your light environment that are causing your body stress.

THE IMPACT OF ELECTRIFICATION

With the invention of the electric light bulb and the electrification of our country, we went from an agrarian society (originally hunters and foragers) to living indoors about 95 percent of the time. This has had a massive impact on our health. Our biology is tuned in to using natural light to run our hormones and physiological processes, but artificial light was never designed to work with our biology.

Before the advent of electric lights, people were exposed to blue light only during the day.¹⁵ One of the adverse effects of blue-light exposure at night is its impact on the hormone and master

antioxidant melatonin, ordinarily produced in the pineal gland during sleep from the conversion of tryptophan into serotonin.¹⁶ Melatonin is supposed to get released when our eyes experience darkness, but many of us never experience true darkness. When we sleep surrounded by light-emitting diodes (LEDs), blinking lights, smartphones and so on, it erodes our melatonin and harms our health.

Melatonin is important because it helps turn other hormones on and off, helps turn our immune system on and assists us with repair and rejuvenation while we sleep. The release of melatonin is supposed to help repair damage from the things in food, air and water that bombard us during the day. Whether the damage comes from glyphosate or electromagnetic frequencies or fluoride, our cells need that repair time. Melatonin facilitates this nighttime clean-up.

The “night owl” concept and nighttime blue-light exposure have done our biology a major disservice. Blue light stops the production and release of melatonin for up to four hours,¹⁷ so even if you fall asleep easily and sleep for eight hours, half of your night’s melatonin could be affected. You won’t necessarily feel it, but your body will notice that it’s not repairing and rejuvenating. You might have more brain fog. In my case, I would wake up after eight hours of sleep and feel like I hadn’t even slept.

Interestingly (and regardless of what we may otherwise think of the American Medical Association), the AMA issued a report¹⁸ in 2016 warning about the significant impact on the health of humans (and other species) resulting from the global transition to “blue-rich” LED street lighting “as the outdoor lighting technology of choice.”¹⁹ The report described white LED streetlights as having “a spectrum containing a strong spike at the wavelength that most effectively suppresses melatonin during the night.”¹⁸ It also noted that LEDs are at least five times more disruptive to the sleep cycle than conventional lighting.¹⁹

The nocturnal melatonin function gets turned off during the day by receptors in the eye, discovered in the 2000s, called melanopsin receptors—what some call the “off switch.”¹⁵ These receptors read light in the blue wavelengths (whether from a blue sky or artificial

blue light), which stimulates cortisol and eliminates melatonin. This is what we want when we wake up—high cortisol that allows us to be awake and alert, and melatonin turned off to better regulate insulin—but it’s not what we want at night. When the blue frequency hits our melanopsin receptors at night and shuts down the melatonin, many of us find that we can’t get to sleep. Our mind is racing because of the cortisol stimulation, resulting in an increased stress response that then feeds on itself.

One of our household rules is, “no screens in bed.” A lot of people sleep with their cell phone in the bedroom. If you do this, at least put it in airplane mode (it will still work as an alarm clock), dim the phone and keep it somewhere out of sight; you don’t want to be blasted with bright light that is going to significantly decrease your melatonin.

CIRCADIAN RHYTHM

Circadian rhythm is the natural twenty-four-hour cycle built into our biology, run by light and dark cycles. Every cell in our body and every organ has a clock, and that clock is set by light through the eye. Circadian rhythm is what keeps us optimally healthy. In 2017, this fact received official acknowledgment through the award of the Nobel Prize in Medicine to three researchers for their discoveries of some of the molecular mechanisms controlling circadian rhythm.²⁰

When we’re exposed to the right type of light, things work well. However, most people are not getting outside at dawn, and they’re seeing a lot of artificial light after sunset. Before the invention of electricity, post-sunset light was limited to firelight and moonlight; because firelight provides red and yellow but not blue light, it is not disruptive to melatonin or sleep. Modern lights *are*. With the unnatural blue lighting that is poisoning us indoors, is it any wonder that people have “seasonal affective disorder” in the winter?

Because the sun rises and sets at different times over the course of the year, our circadian rhythm tells us what season we’re in. It is no accident that in winter, some animals change their coats or gain more weight or hibernate—they get those signals from the light. And we get

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If you are neglecting your light environment, you don't have the full picture of how to be optimally healthy.

those same signals. Just as animals store sugars as fat for the coming winter, we do the same thing. The problem is that for us, winter never comes, because we keep the lights on all winter long. Our bodies think that winter is coming and store fat from abundant carbohydrates (think of fall fruit and Thanksgiving and holiday pies!), but from a circadian rhythm standpoint, winter never arrives.

LIGHT FIRST

Wise Traditions readers and Weston A. Price Foundation members are rightly committed to the importance of nutrition, but let me tell a story that illustrates why addressing one's light environment should be a top priority. In fact, if you are neglecting your light environment, you don't have the full picture of how to be optimally healthy.

My friend Todd was a “biohacker,” someone who knew just about everything about health, nutrition and diet. He was eating all the right foods, and he had every “biohacking” gadget and device that money can buy, but he had forty-five pounds to lose, and for a year and a half, he couldn't figure out how to lose them. About two months after he came to one of our retreats, where he learned about light, he sent us the following email: “You'll never believe this. In just six weeks, I lost the forty-five pounds, and the only things that I did differently were to go outside at sunrise and wear blue-light-blocking glasses at night.” He made no other changes; just shifting his light exposure allowed him to lose that stubborn weight.

Researchers have observed this phenomenon in mice, too.²¹ In one study, two groups of the same types of mice had identical diet and exercise regimens, but one group was exposed

to twenty-four hours of light in their cage, while the other group had twelve hours of light and twelve hours of darkness. The mice continually exposed to light became obese, whereas the mice exposed to twelve hours each of light and darkness remained normal weight. Light was the only variable in their living conditions that was different. Todd's story and these types of studies confirm that light is a “big deal.”

MORNING SOLUTIONS

The good news is that light is a relatively easy thing to fix. A good first step is to do what Todd did: get outside at dawn (meaning within thirty minutes of sunrise). It's completely free, it's backed by research and it's designed to work with our biology. It is how nature created us. Obviously, the time of sunrise changes with the seasons. It will be earlier in the summer and later in the winter. Some people argue, therefore, that it's “inconvenient” to get outside at sunrise, but I would argue that cancer, obesity and diabetes are even more “inconvenient.”

What is so important about dawn light? Light at dawn is different from light at any other time of the day because there is no UV light at dawn. What the lack of UV light means is that, while you're not going to get more vitamin D, men will get a significant increase in testosterone, and women will get a significant increase in estrogen. The no-UV light turns your hormones on. It also sets your melatonin clock—sixteen hours after you see the sun rise in the morning, your melatonin is triggered to be released. There are studies showing that you sleep better at night, literally just by getting outside at dawn.²⁰

When you go outside at dawn, there is no need to stare directly at the sun. Just being outside at that time of day will start to allow your

DITCH THE SUNGLASSES AND SUNSCREEN

Our ancestors were always exposed to the right type of light. Our biology knows how to make intelligent use of sunlight—no sunglasses required. Originally, sunglasses were designed for Hollywood movie stars who were exposed to bright studio lights; they were not designed for outdoor use. Then Sam Foster of the Foster Grant brand started mass-producing sunglasses so that ordinary people could look like movie stars.

When we put on sunscreen, cover up and wear hats and sunglasses, we're eliminating our exposure to nature's light. Our eyes not only have melanopsin to read blue light, but neuropsin receptors to read ultraviolet light. We need to read all the spectrum and frequency of light as nature designed. There are better ways to practice safe sun exposure and build up what Dr. Jack Kruse calls a “solar callus.” Kruse colorfully says, “We would not place a tarp over an orange tree and still expect the tree to bear fruit.”

eyes to become less sun-sensitive. In fact, even people with blue eyes, said to be more sensitive to sunlight, can retrain their eyes by regularly going outside at dawn. As for how long to stay outside, around eighteen minutes is ideal, but even two to five minutes of morning sun will have quantum effects on your biology. If two to five minutes is all you can manage, it's still worth doing. People also ask me what to do if they live close to a mountain (where they don't get the morning light until later) or about the impact of cloudy, foggy or rainy conditions. I tell them that doesn't matter. As long as you get outside within thirty minutes of sunrise, the light is reaching your eyes.

During the day, there are a variety of other ways to improve your light. If you are in your car commuting to or from work, roll your window down or open your sunroof. If you are at home, open a window. Even if it's winter or I am stuck in a Zoom meeting, I will open a window. (This is because closed windows allow all the blue light in but none of the UV, and they eliminate 50 percent of the red and infrared.) I have been working remotely for eighteen years, a work routine that I designed on purpose so that I could have a better light environment and do some exercise during the day. Sometimes, I still have to go back to corporate headquarters, so if I'm there, I'll have a red light shining on me. You can also go outside and take "light breaks" (just like people used to go outside for smoking breaks). All of these things are circadian cues. Light has quantum effects in our body, so even a tiny amount has a big impact on our biology.

If you are a coffee drinker, do not drink your coffee until after you see the morning light, or even a little while later, because coffee itself is like a shot of cortisol. If you haven't seen the natural sunlight to clear the melatonin and set the right amount of cortisol, coffee will make your cortisol go much higher, and this can cause stress and anxiety. *[Editor's note: WAPF does not recommend drinking coffee.²³]*

Another tip that is very helpful, especially for people who are trying to lose weight, is to have the first meal of the day no later than thirty minutes after seeing the sunrise. Even better is to make it the biggest and most protein-heavy (fifty to seventy-five grams) meal of the day. *[Editor's note: WAPF recommends ample animal fat with your protein.]* As Dr. Jack Kruse emphasizes in his Leptin Reset Protocol for Weight Loss,²⁴ eating soon after waking helps to reset leptin, which is the hormone that signals the brain when you've had enough to eat and regulates body weight. Seeing the sunrise and then eating your first meal within thirty minutes not only resets your circadian rhythm but resets leptin and can help you lose weight.

These days, many people practice intermittent fasting, eating just two meals a day. This can be a helpful thing to do, but I would argue that it is not a good idea to skip the morning meal, especially as you approach the shorter winter days or if you are a coffee drinker. (Intermittent fasting in the morning followed by coffee can be a massive stressor on the body.) Studies show that people who eat their last meal after sunset weigh more than people who eat their

People who eat their last meal after sunset weigh more than people who eat their last meal before sunset.

BLUE-LIGHT-BLOCKING GLASSES

Before my wife and I started our company DreamWalkerz (dreamwalkerz.ai), I had tested just about every pair of blue-light-blocking glasses out there. I found that there is wide variation in the blue-light-blocking tint. Some glasses are clear; when they say that they block blue light, they probably do, but it may be only 2 percent, which is not nearly enough at night. At night, you ideally want to block 100 percent of blue light, and lenses that do that generally will look orange. Some companies offer red lenses that block 100 percent of blue and green light (because some people are sensitive to green light as well), but you can't see enough in those red lenses, so I do not find them practical. Our company makes amber or orange lenses that block 100 percent of the blue. Because they don't block so much of the light that you can't see anything, we think that people are more likely to actually wear them.

There are a number of solutions for people who wear prescription glasses. If I had prescription glasses, I would probably get two pairs of glasses—one for daytime (yellow) and one for nighttime (orange). However, not all blue-blocking companies will do prescriptions. Alternatively, the VivaRays company offers magnetic clip-ons, with day and night versions, that you can use over your prescription glasses, and that would probably be cheaper than buying two pairs of blue-light-blocking prescription glasses. A third option is to see if your optometrist is willing to put a blue-light-blocker on your prescription (it is called BPI 550 tint).

It's ideal for sleep and circadian rhythm (especially when the days are shorter) to eat your biggest meal in the morning and a smaller last meal around 4:30 p.m.

last meal before sunset.²⁵ We gain weight when we eat too close to the time when our cells are trying to rest and digest. Even if you eat three meals a day, it's ideal for sleep and circadian rhythm (especially when the days are shorter) to eat your biggest meal in the morning and a smaller last meal around 4:30 p.m. In addition, for people who are prone to anxiety or stress, eating in the morning can lower cortisol and make them feel calmer.

Parents object that an early dinner is inconvenient when children are involved in after-school activities. In our case, my wife and I would eat early and then prepare dinner for the kids later and join them at the dinner table without eating ourselves.

EVENING LIGHT

One thing that most of us are not going to do is go to bed when it gets dark. However, think about our ancestors a century or two ago. Candles were expensive. When it got dark, there were only so many candles one could afford to burn, and so, shortly after dark, people went to sleep. According to some estimates, people in 1910 slept, on average, five hundred hours more each year than they do today.²⁶

If you're not getting great sleep and you want more sleep, you could try switching to firelight or candlelight after dark, but again, most people are not likely to do this. In our case, we did install a woodstove, which provides both firelight and heat. With that said, if you are going to be out and about at night, or your family is not willing to forego screens or lights at night, then this is where blue-light-blocking glasses come in. Remember that the melanopsin receptors will read the blue light (which increases cortisol and clears melatonin), but if you put on a pair of those glasses, they will block the blue wavelength of light.²⁷ You don't even have to change your home lighting. These days, there are many brands of high-end blue-light-blocking glasses, but you can also just buy inexpensive Uvex orange safety glasses. Spend two weeks wearing a pair of blue-light-blocking glasses after sunset and see how you sleep and feel. For me, it made all the difference in the world.

The next step is to take stock of your bedroom. You should have a pitch-dark bedroom

when you sleep. That means no phone charging, no blinking lights, no illuminated clocks and no light-emitting devices of any kind. To block out light coming in from the street, blackout curtains are very helpful. Alternatively, you can wear an eye mask. When I travel, I bring an eye mask and also carry black electrical tape to cover up those annoying little lights in hotel rooms. Another hotel trick, when you can't get the blackout curtains to stay closed, is to take one of the hotel coat hangers (the kind that has clips for pants) and use it to clip the curtains closed!

WHAT ABOUT LIGHT BULBS?

With the ban on incandescents (supposedly now reversed, though they are still hard to find), many people installed "energy-saving" LEDs. The problem with LED or fluorescent lights, and even with incandescents at night, is that they have too much blue light. LEDs became more popular around 2005, which is when manufacturers figured out how to make white LEDs. The white lights use a blue LED chip, a driver that turns on and off with every cycle of the electricity. (In the U.S., that is something like sixty times a second.) Philips credits itself with being "at the forefront of LED lighting development,"²⁸ and they charge anyone who sells LED lights a fee because—in a genius business move—they bought every company that had anything to do with LED patents. Your phone screens, tablets, televisions, overhead lights and refrigerator lights are all based on the blue LED drivers, which produce exactly the wrong type of light for our nighttime biology.

Color temperature is a way to describe the color appearance of the light provided by a light bulb, measured with a spectrometer in degrees Kelvin, generally on a scale from one to ten thousand. Lower Kelvin values indicate warmer and more golden light (more yellow, red and orange); higher Kelvin values indicate cooler, brighter, blue-white light. An LED in what I consider to be a more tolerable eighteen hundred range will look like a warm amber LED.

You can buy "blue-free" LEDs, but in our house, we primarily use red lights. (If you look at our house from the outside, it looks like Halloween.) This is because the red lights don't

impact melatonin. In our bedroom, we have one red light (for evening) and one incandescent light (for daytime), and we can turn them on separately. We have the same arrangement in our bathroom—regular bright white lights for daytime, and red and infrared lights for evening. We also have a red strip light down our hallway. The only room where we don't recommend red lights is the kitchen. (If you cut yourself, you can't see the blood because everything looks red!) Speaking of the kitchen, I also taped 3M Red Lens Repair Tape over the bright blue LED refrigerator bulb.

Admittedly, red lights in the home are not for everyone. If you don't want to go that route, you can get blue-light-free amber lights that look a little more natural, or you can use salt lamps because their light is orange and red. And even if you do nothing else, it makes a big difference if the lights you use at night are lamps positioned at a lower level than overhead. Overhead lights are more harmful at night because of the angle at which the light reaches your eyes.

WEAPONIZED LEDs

In December 2020 in Wisconsin, I was driving to an evening event where I was a speaker. At that time of year, it gets dark at 4:30 p.m. I was running late, and I missed the exit on the highway. As I tried to get to the next exit to turn around, a state trooper pulled me over. The trooper looked at me and said, "Can you take your glasses off?" Then he asked, "Are those blue-light-blocking glasses you're wearing? Do they protect your eyes against these ridiculously bright LED headlights?" I let him try them on, and he said, "Okay, you can go." Not only did I get out of a ticket, but I guarantee that the state troopers in Wisconsin are now wearing blue-

blocking glasses!

I call those LED headlights "weaponized headlights," and even the 2016 report by the AMA warned about them. If you drive at night, you know how bright they are. I keep multiple pairs of blue-light-blocking glasses in my console so that when those headlights are flashing me, I can put them on and protect my eyes. (A friend of mine found that inexpensive red DeWalt laser enhancement glasses can help tone down those headlights.) That intense level of brightness at night will trigger destruction of your melatonin and higher cortisol. There is no reason for them to be so bright—they could be more yellow and still work very well.

All LEDs are going to flicker, unless they're on direct current (DC). That's just how the chip works. The flicker can cause stress and migraines in some people. LEDs flicker at a rate that our brain notices but our eyes generally don't see. (With some LED lights, however, you can see the flicker, especially if you take a video of the light.) Therefore, it's important to get the right type of LEDs—those with no or low flicker—or get incandescent bulbs. (A good resource for questions about flicker is the red-light therapy company GembaRed.²⁷)

Some people will go so far as to run their lights off of DC to address the flicker problem. More companies are coming out with DC technologies. Battery power also achieves the same result, so some people use a battery-powered night-light, reading light or desk lamp. We use battery-powered reading lights that are amber and red, which also helps mitigate electromagnetic frequencies. Another solution is to find an LED that has higher flicker to the point where the brain can't detect it (look for the terms "color rendering index" and "flicker percentage"). Once the flicker gets high enough, your brain perceives it as always on. Building biologists also recommend getting rid of dimmer switches, which are problematic from a dirty electricity standpoint.³⁰

HOW MUCH SLEEP?

Most people think we need eight hours of sleep every night, because that's what we've always been told. However, if you go to bed earlier (or wake later) in the winter, sleeping at least nine and a half hours, then you won't need to sleep as much in the summer. In summer, the days are longer, and there is a lot more to do. You're harvesting, you're collecting berries or you're out late with friends. Researchers found that mice who slept for nine and a half hours were unable to get cancer despite the researchers trying to give them cancer—and the study even used mice

FLUX FOR YOUR COMPUTER

The f.lux app—which is free—can lower or eliminate blue light on your computer screen and even make your screen emit red light at night, if you wish. The program reduces blue wavelengths and shifts your display to warmer tones at sunset, supporting natural circadian timing.

You can install f.lux on a Mac or PC laptop, but none come with it pre-installed.

To install f.lux on your laptop, go to <https://justgetflux.com>. Click "Download" and run the installer for your operating system. Then open f.lux and allow any system permissions it requests. Enter your location or allow location access so f.lux can set sunset/sunrise automatically. Choose a color temperature preset (I recommend Amber 1900K). For night use, select the lowest comfortable color temperature setting. You can also set an optional bedtime schedule.

It's also possible to get equivalent f.lux protection on phones.

engineered to be predisposed to cancer!

Think of winter as the time to focus more on things that wind you down—such as prayer or family time. And if you go to bed earlier and/or sleep later—even if it's only half an hour earlier or later—you will begin to reverse whatever you did in the summer. You will feel better, with less brain fog and more motivation.

STEPPING INTO THE LIGHT

What would our ancestors have done? They would have been outdoors much more often. They would have gone to bed earlier in winter. They would have had no exposure (and no ability to be exposed) to blue light. At night, they would have had firelight, candlelight and moonlight. Our bodies were not designed for the artificial lights with which we now surround ourselves.

If you take nothing else away from this article, remember that spending more time outside can help you live longer. Getting outside at dawn (and bonus points if you are barefoot and grounded) and doing a little bit of movement will help you clear the melatonin. If you follow that by eating your largest meal of the day, you are resetting your circadian rhythm and lowering your stress for the whole day. Better light and sleep will help your body repair damage and rejuvenate. ☯

Thaddeus Owen, MS, is a circadian health expert, biohacker and co-founder of Dream-Walkerz and PrimalHacker. Known as “The WHY Guy,” he has spent over fifteen years researching the intersection of light, sleep and human performance. Thaddeus has been featured on TEDx and leading podcasts, sharing practical ways to optimize circadian rhythm, improve mitochondrial function and live in harmony with nature. His work bridges science and ancestral wisdom, empowering people to use light as medicine for longevity and vitality.

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Rapid, Economical Fluorescence Detection of Vitamin D in Selected Foods

By John Suarez and Valerie Suarez, Suarez Technology Group

This report provides results from fluorescence-emission experiments conducted by the Suarez Technology Group for the Weston A. Price Foundation. Fluorescence emission provides a relatively simple, low-cost method for identifying the presence and concentration of chemical compounds.

Certain compounds have intrinsic fluorescence—that is, they emit different colors of light when excited by ultraviolet or visible light. The word intrinsic is used to emphasize the fact that the compound has this property entirely on its own; no additives or dyes are needed.

Our primary goal was to detect the presence of vitamin D in seven foods.

This “input-output color” relationship can be used to narrow down the chemical content of a substance, or provide clues on the presence of a substance you’re looking for. The input-output relationship of fluorescence isn’t always unique, but it can be used to search for known substances or rule out the possibilities of others. While more costly and precise methods can be used,¹⁻⁷ fluorescence provides a first-step measure of confidence before investments are made into more detailed, precision testing.

In this study, fluorescence spectroscopy was used to detect the presence of vitamin D in seven foods: chicken liver, cod liver oil, lard, egg yolk, goose fat, Kerrygold butter, and grass-fed raw butter. Our primary goal was to detect the presence of vitamin D in these foods. Concentration levels—that is, amounts of vitamin D in each food—can also be inferred from the data, but we advise more precise controls before doing so.

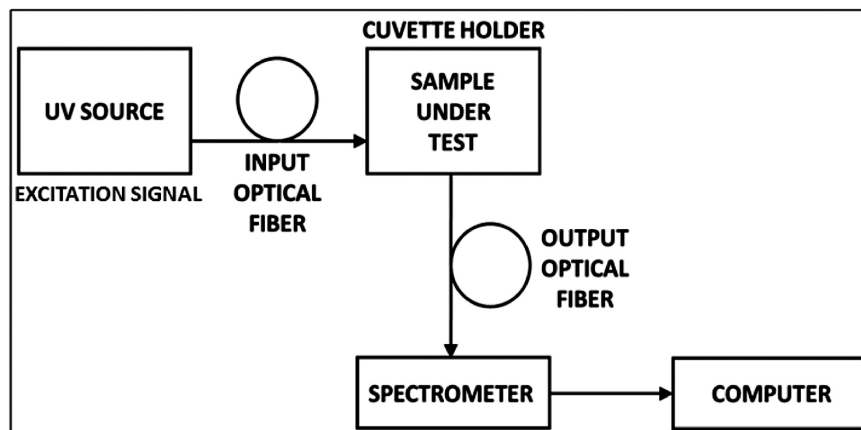
A diagram of the experimental setup is shown in Figure 1. In each experiment, a small amount of each food was added to one milliliter of water, placed in a cuvette. These are referred to as samples. A 365-nm ultraviolet excitation signal was used in the setup—it can be thought of as the input signal. The input signal was provided to each sample, and—in the case of vitamin D—we expected to see an output signal around 380–390 nm.

The output signal is more properly called the fluorescence emission signal, and it is most easily observed at a 90-degree angle from the input signal. An optical filter isolated the wavelength band around 380 nm, since that was where we expected to see the vitamin D output signal. Using an optical fiber, the output signal was sent to a spectrometer. The spectrometer allowed the output signal data to be processed, stored and retrieved.

To have a reference for our experimental data, before testing the seven foods, we examined the fluorescence of commercial, off-the-shelf vitamin D supplements. Those supplements contained known amounts of vitamin D, read directly from their labels. But, the supplements also contained MCT oil as an added ingredient. So, in order to distinguish the response of the MCT oil from the response of vitamin D, we first measured the response of commercial, off-the-shelf MCT oil supplements. The response of the MCT oil is shown in Figure 2.

We then measured the responses of the vitamin D supplements in various concentrations; these are shown in Figures 3–7. Observe that the general shape of the MCT oil’s output signal is significantly different from the output signals of the vitamin D supplements: the MCT oil’s output signal does not have a prominent intensity peak in the vicinity of 385 nm. This

Figure 1: Experimental setup for UV-VIS fluorescence spectroscopy.



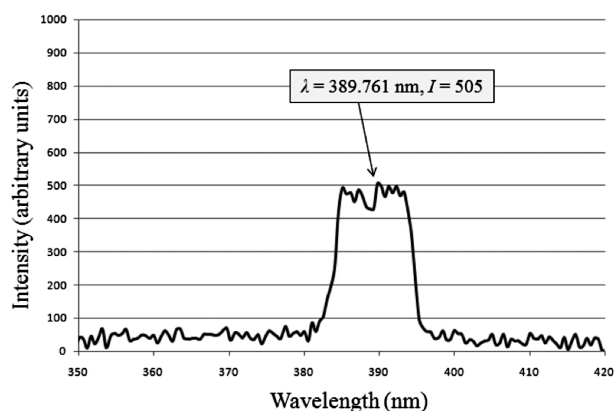


Figure 2: MCT Oil, 1 mL; no water added.

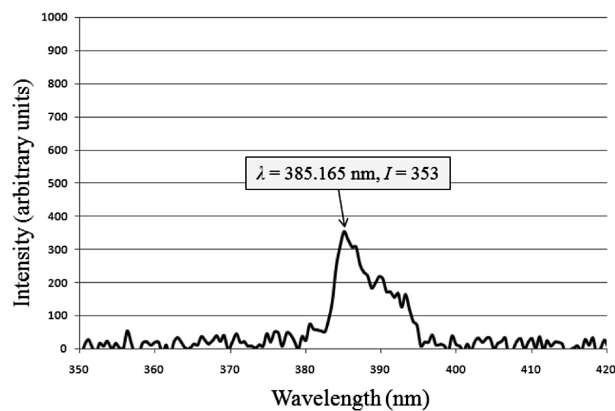


Figure 3: Vitamin D, 200 IU (= 5 μ g) added to 1 mL purified water.

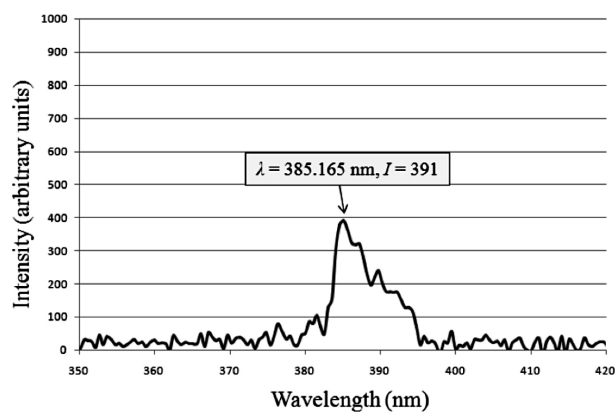


Figure 4: Vitamin D, 400 IU (= 10 μ g) added to 1 mL purified water.

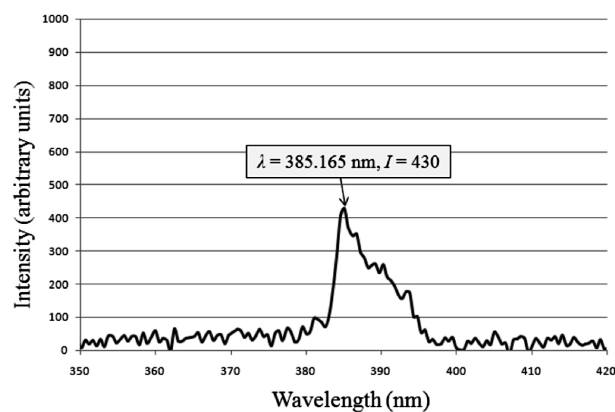


Figure 5: Vitamin D, 600 IU (= 15 μ g) added to 1 mL purified water.

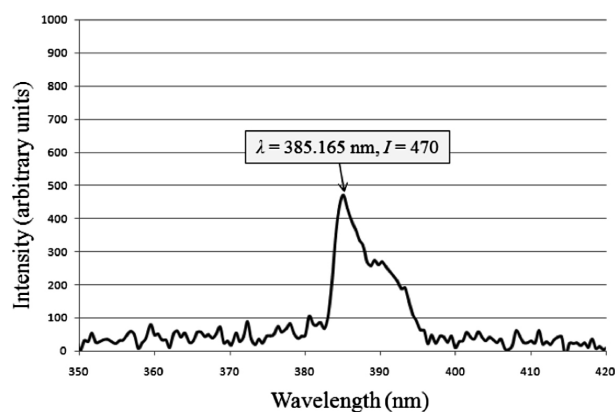


Figure 6: Vitamin D, 800 IU (= 20 μ g) added to 1 mL purified water.

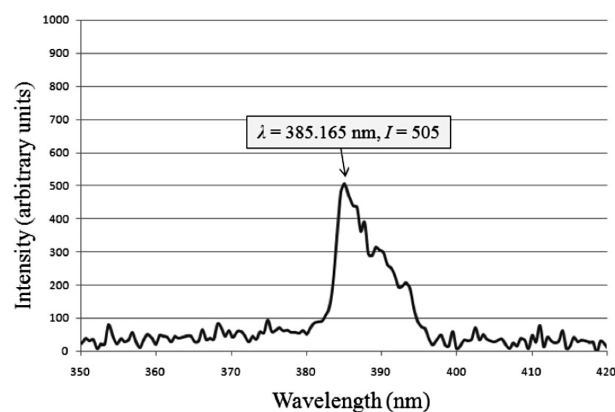


Figure 7: Vitamin D, 1 000 IU (= 25 μ g) added to 1 mL purified water.

All exhibited fluorescence-emission response profiles similar to the vitamin D supplements, with the greatest intensity from pasture-raised lard.

general shape of the output signal is called the fluorescence-emission response profile.

Next, we tested the seven foods. The results showed that they all exhibited fluorescence-emission response profiles similar to the vitamin D supplements, with the greatest intensity from pasture-raised lard. Again, notice that the profiles shown in Figures 3–7 (vitamin D supplements) have a prominent intensity peak near 385 nm; this peak also appears in the profiles shown in Figures 8–14, which are the profiles of the seven foods. Details on the specific food and amount of the food used in each sample are provided in the caption of each figure.

CONCLUSIONS

These experimental results strongly suggest the presence of vitamin D in chicken liver, cod liver oil, pasture-fed lard, egg yolk, goose fat, Kerrygold butter and pasture-fed raw butter. This is because the fluorescence-emission response profiles we observed from the food samples closely resembled the response profiles of the vitamin D supplements.

These results warrant more detailed studies on the vitamin D content of these foods, with a focus on the amount of food content used in each sample and on the unique spectral signature of vitamin D. In this study, with the exception of the egg yolk, we restricted each sample to foods in liquid form, with no more than 0.5 mL of each food. The amount of each food added to each sample could not be measured with greater precision in this study. Also, other techniques such as Raman spectroscopy can be used to give

even more compelling evidence of vitamin D content in these foods.

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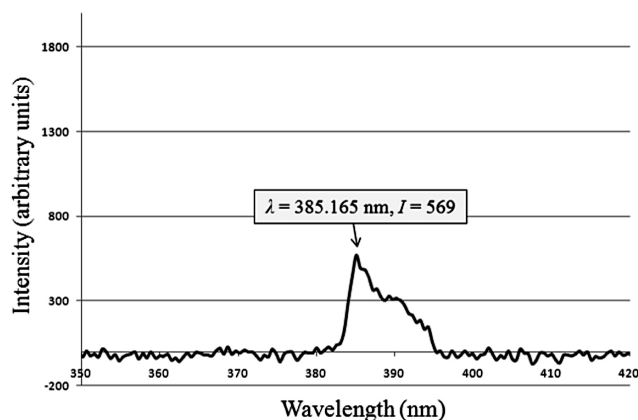


Figure 8: COD LIVER OIL, < 0.5 mL added to 1 mL purified water.

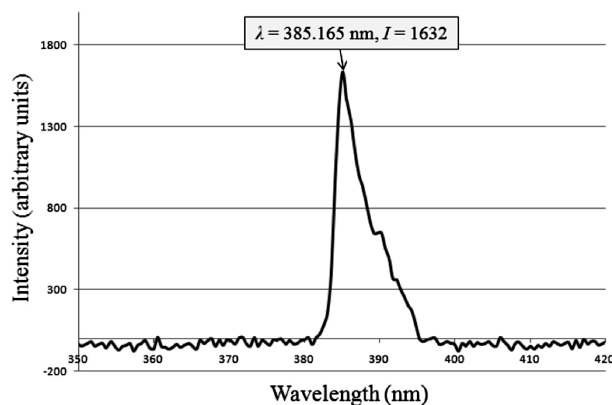


Figure 9: CHICKEN LIVER, < 0.5 mL added to 1 mL purified water.

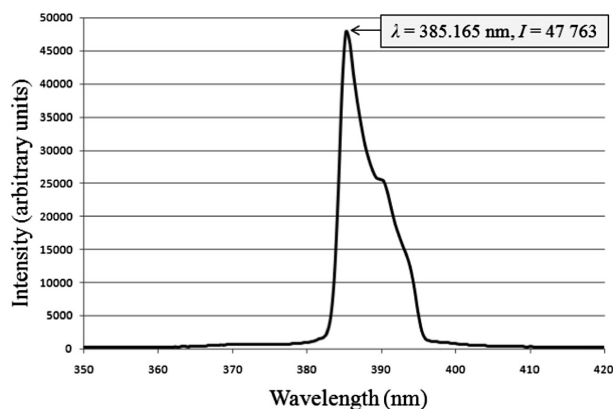


Figure 10: PASTURE-FED LARD, < 0.5 mL with 1 mL of purified water added.

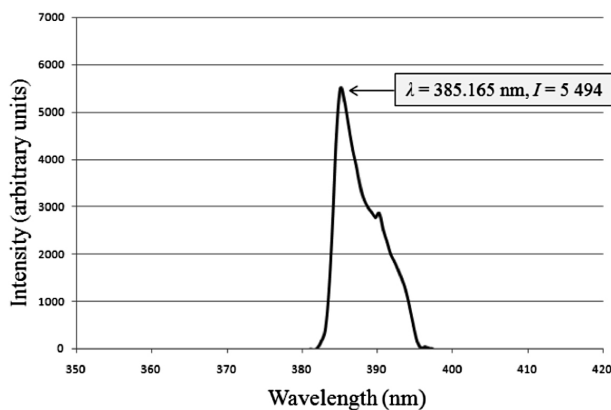


Figure 11: EGG YOLK, < 10 g with 1 mL of purified water added.

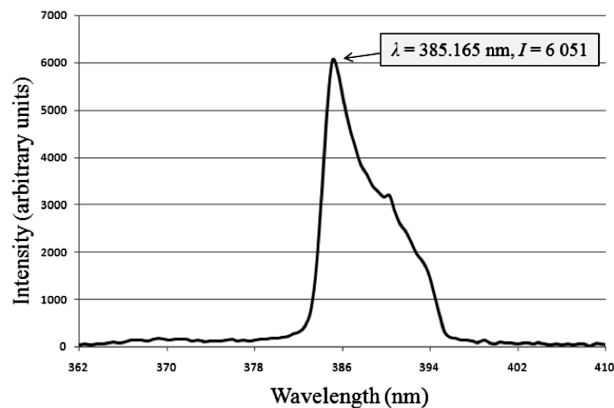


Figure 12: GOOSE FAT, < 0.5 mL with 1 mL of purified water added.

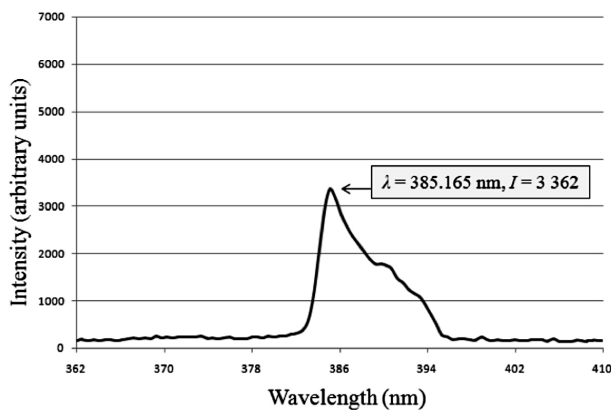


Figure 13: KERRYGOLD BUTTER, < 0.5 mL with 1 mL of purified water added.

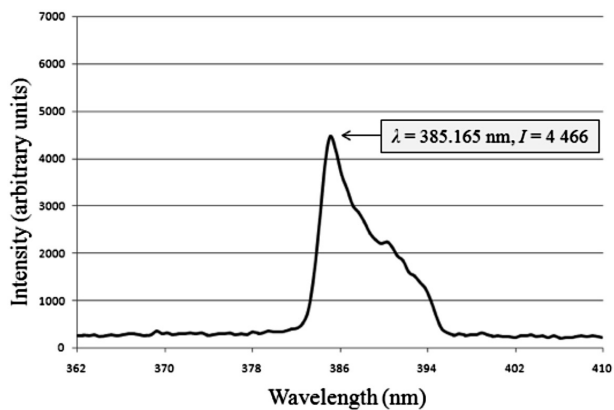


Figure 14: GRASS-FED RAW BUTTER, < 0.5 mL with 1 mL of purified water added.

Reading Between the Lines

By Merinda Teller

Butter Is Back—and More Appreciated Than Ever

The early twentieth century marked a turning point for butter consumption that turned out to be hugely detrimental to Americans' health, while also interfering with their enjoyment of food.

In December 2025, in the lead-up to the holiday cooking season, the International Dairy Foods Association issued a press release—titled “You Butter Believe It”—that enthusiastically drew attention to rising butter consumption in the U.S.¹ Citing data from the U.S. Department of Agriculture (USDA), the press release celebrated the almost seven pounds of per-capita butter consumed in 2024 as a “historic high” for the fifty-year period during which USDA has been tracking dairy trends.

After decades of butter demonization, seven pounds per person per year may sound like an “all-time high”² to some (in 2000, after all, annual per-capita butter consumption was just four pounds), but historical accounts that reach farther back than the mid-1970s reveal that butter consumption was once considerably higher. In the early 1900s, Americans reportedly consumed the equivalent of “about a stick and a half per person per day.”³

Sadly, the early twentieth century marked a turning point for butter consumption that turned out to be hugely detrimental to Americans' health, while also interfering with their enjoyment of food. Helped along by Crisco's aggressive marketing of its toxic cottonseed oil product,⁴ supply shortages and rationing during the two World Wars and increasingly nefarious dietary guidelines, per capita availability of butter (with “availability” being a proxy measure for consumption) decreased by 68 percent (from 17.9 to 5.7 pounds per year) from 1909 to 2017, with similar declines in availability of other saturated animal fats like lard and tallow.⁵ Meanwhile, margarine and seed oil availability increased by 192 percent and 329 percent, respectively. The surprisingly honest researchers who in 2022 documented those “down” and “up” trends admit that the burgeoning of chronic disease over the last century has no association with saturated fat intake.⁵ For our modern food-

related ills, their study is yet another piece of evidence that we should be condemning what Dr. Weston A. Price called the “displacing foods of modern commerce”—not butter.

A FORTUITOUS DISCOVERY

Historians estimate that humans have been making butter for at least six thousand and perhaps as long as ten thousand years. According to the colorful legend that constitutes butter's origin story, the discovery of butter was a “lucky accident.”⁶ The hypothesis is that nomadic tribes kept milk (for example, from yaks, sheep, goats or camels) in animal bladders attached to their pack animals, and as they journeyed, the sacks would bounce around, causing the milk to churn itself into butter.⁷ NPR describes this apocryphal gastronomic-history-making moment as follows:

“Thirsty from a long, hot journey, [a] weary herdsman reached for the sheepskin bag of milk knotted to the back of his pack animal. But as he tilted his head to pour the warm liquid into his mouth, he was astonished to find that the sheep's milk had curdled. The rough terrain and constant joggling of the milk had transformed it into butter—and bewilderingly, it tasted heavenly.”⁸

From there, as author Jennifer McLagan recounts in the fifty-four pages of comments and recipes she devotes to butter in her cookbook titled *Fat*,⁶ humans were quick to figure out strategies to “prolong butter's life” and—long before the advent of modern refrigeration—keep it from going rancid. Preservation methods included heating it and removing the milk solids to make ghee (a particularly handy and nutritious technique in hot climates such as India's) or salting it—salt is, after all, “the world's oldest preservative” and made it possible to have but-

ter in the winter months.⁹ Nowadays, high-end cooks often shun salted butter, claiming that it is “the cause of many failed recipes” and preferring to retain control over the amount of salt in their baking or cooking.¹⁰

In Ireland, Scotland and Scandinavia, another preservation technique was to bury butter in cool-temperature, low-oxygen peat bogs. According to some historians and archaeologists, the peat bogs may also have been handy for hiding butter from fat-starved thieves!¹¹ Over time, however, “bog butter” apparently acquired a “rancid, cheesy aroma” and “waxy texture” that may have lessened its palatability.¹¹

Considering the price of butter today, it is somewhat astonishing to learn that among the northern Europeans of yore, the upper classes initially dismissed butter as a “peasant food.”¹² In a cookbook from 1450, McLagan points out, lard was the preferred fat and only 2 percent of recipes called for butter. However, no one with taste buds can ignore the wonders of butter for long. By the sixteenth century, butter was showing up in about a third of cookbook recipes, and by the nineteenth century, “it had become the basic building block of classic French cuisine.”¹²

As butter gradually “ceased being a peasant food and was commandeered by the rich,”¹² the very wealthy even started purchasing indulgences from the Catholic Church to continue eating it during Lent.³ The Rouen cathedral’s “Butter Tower” (*Tour de Beurre*), constructed between 1488 and 1506, is said to owe its name to this “unique medieval fundraising strategy.”¹² Georges d’Amboise—a French cardinal, arch-

bishop and statesman under King Louis XII—was a significant proponent of the cathedral, and as such, “obtained a papal dispensation allowing donors to the tower’s construction to consume butter during Lent.”¹² (A modern Orthodox priest striving to bring people back to the true meaning of Lent satirically asks, “If I can’t have butter, can I have ‘I Can’t Believe It’s Not Butter’? Where’s the Lenten sacrifice in substituting one thing for something else that tastes just like it? Like non-dairy coffee creamer, which is worse for you healthwise than real cream.”¹³)

SACRED AND VALUED

In interviews about her book, *Butter: A Rich History*,¹⁴ author Elaine Khosrova has commented that, for ancient civilizations, “the unexplained mystery behind milk’s transformation into butter made it seem magical.”¹⁵ This likely explains butter’s long-ago use as a sacred offering to the gods by civilizations such as the ancient Sumerians.¹⁵ (Some bloggers suggest that butter offerings to the gods have continued into modern times!¹⁶) Butter appears in the Bible, too, with the compelling verse in Isaiah 7:15 stating, “Butter and honey shall he eat, that he may know to refuse the evil, and choose the good.” According to one biblical scholar, the Hebrew word in question has a “wide range of semantic coverage” which (acknowledging the breadth of milk byproducts) could in certain contexts also be translated as “sour milk,” “cream” or “curds.”¹⁷

From ancient times on, butter has been prized for its medicinal properties.¹⁸ The Ro-

Butter appears in the Bible, too, with the compelling verse in Isaiah 7:15 stating, “Butter and honey shall he eat, that he may know to refuse the evil, and choose the good.”

JULIA CHILD ON “COLD FLAVORED BUTTERS”

Cookbook author Jennifer McLagan notes that butter is “an excellent flavor carrier,”¹⁶ and in her classic *Mastering the Art of French Cooking*, Julia Child acknowledges this fact by devoting half a dozen pages to *beurres composés*. Describing butter’s many “appetizing uses” when creamed with “herbs, wine, mustard, egg yolks, shellfish meat, or other flavorings,” Child recommends flavored butters for basting, sauce and soup “enrichment,” serving on top of grilled fish or meat, and as a sandwich spread (by creaming butter with egg yolks and herbs). These pages include recipes for:

- Mustard butter
- Anchovy butter
- Garlic butter
- Parsley, tarragon or mixed herb butter
- Shallot butter (with red or white wine)
- Shellfish butter (made with cooked shellfish “debris” or meat and hot melted butter)

Of course, no French cookbook would be complete without also including a recipe for *beurre pour escargots* (butter creamed with shallots, garlic, parsley, salt and pepper) to serve with snails. Child observes that this flavored butter equally well accompanies broiled meats, fish and shellfish.

mans applied butter topically for painful joints, and for that same condition, Ayurvedic medicine still prescribes ghee. In addition to helping with painful joints and sore muscles, the Ayurvedic tradition of massage with warm ghee is said to improve circulation, enhance skin health and provide other benefits.¹⁹

Butter and other dairy products are also described in early Chinese materia medica. One entry, referring to a butter oil extract that is “superior in efficacy to butter,” describes it as something that can “[nourish] bone marrow and . . . be used as a topical medication.”²⁰ A medical text from the Daoist canon recommends deriving an extract from “good butter” as a remedy for “all illnesses of the lungs, coughs, and when pus and blood do not cease.”²⁰ And rules for Buddhist monks who were ill included a “seven-day prescription” consisting of “butter oil, honey, rock honey, fat, and fresh butter.”²⁰

The recurrent mentions of ghee and butter extracts in these ancient healing traditions are particularly interesting in light of Dr. Gerald Pollack’s paradigm-shifting research on fourth-phase—also called exclusion zone (EZ)—water. Pollack and co-author Abha Sharma have found that “large EZs” form next to ghee (as well as next to coconut oil and lard), with cold ghee surfaces producing “especially large EZs.”²¹ This EZ buildup, they conclude, “may be a critical feature underlying the health-promoting function of fats such as ghee.”

Throughout history, butter also has played an important economic role as a “valued commodity,”²² becoming a notable feature of the Scandinavian and Irish economies centuries ago.²³ In the American colonies and early United States, families learned that they could trade or sell their butter surplus. As one historian of the U.S. explains, the key play-

ers in this regard were women: “Though men tended to ignore butter production, it became a valuable way for women to profit off their farms. Women used the revenue from butter sales to buy household goods,” whereas “men used the revenue from selling grain and animals to buy farm equipment and more land.”²⁴ “Women’s butter”—buttressed by stable demand and prices—became particularly important during economic downturns, cushioning households against wider economic instability. As of 1840, butter—still mostly made on farms—was “the fifth most valuable agricultural product in the mid-Atlantic region.”²⁴ (Other “high-value” agricultural products of the day included wheat, maple sugar, salted meat and, of course, whiskey.²⁵)

A COMPLEX FAT

Butter—made by separating the milk fat in cream from liquid buttermilk—is simple in concept. However, as McLagan explains, it is actually a “very complex fat,” containing more than five hundred different fatty acids and four hundred types of volatile compounds. In North America, butter’s fat content is set at 80 percent (the European standard is a slightly higher 82

GOOD THINGS IN BUTTER

VITAMINS: Butter is a rich source of easily absorbed vitamin A, needed for a wide range of functions, from maintaining good vision to keeping the endocrine system in top shape. Butter also contains all the other fat-soluble vitamins (D, E and K2), which are often lacking in the modern industrial diet.

MINERALS: Butter is rich in important trace minerals, including manganese, chromium, zinc, copper and selenium (a powerful antioxidant). Butter provides more selenium per gram than wheat germ or herring. Butter is also an excellent source of iodine.

FATTY ACIDS: Butter provides appreciable amounts of short- and medium-chain fatty acids, which support immune function, boost metabolism and have antimicrobial properties; that is, they fight against pathogenic microorganisms in the intestinal tract. Butter is a unique source of very short-chain butyric acid, important for thyroid health and for digestion. Butter also provides the perfect balance of omega-3 and omega-6 essential fatty acids. Arachidonic acid in butter is important for brain function, skin health, feel-good chemicals and prostaglandin balance.

CLA: When butter comes from cows eating green grass, it contains high levels of conjugated linoleic acid (CLA), a compound that gives excellent protection against cancer and also helps the body build muscle rather than store fat.

GLYCOSPINGOLIPIDS: These are a special category of fatty acids that protect against gastrointestinal infections, especially in the very young and the elderly. Children given reduced fat milks have higher rates of diarrhea than those who drink whole milk.

CHOLESTEROL: Despite all of the misinformation you may have heard, cholesterol is needed to maintain intestinal health, hormones and for brain and nervous system development in the young.

WULZEN FACTOR: A hormone-like substance that prevents arthritis and joint stiffness, the Wulzen factor ensures that calcium in the body is put into the bones rather than the joints and other soft tissues. The Wulzen factor is present only in raw butter and cream; it is destroyed by pasteurization.

percent), with water and a small percentage of milk solids comprising the remaining 20 percent.⁶

Once upon a time, before the advent of mass-produced butter, butter-eaters experienced more seasonal variability. The direct link between flavor and what a cow eats meant that the deeper yellow butter from pastured cows in spring and early summer might come with “floral and herbal notes,” while winter butter would have been paler and milder in flavor.⁶

Dr. Price’s pioneering research also established a direct link between what cows eat and butter’s nutritional properties. When cows were grazing on rapidly growing green grass, it not only produced a “marked change in the color of the butterfat”²⁶ but greatly enhanced the butter’s vitamin content. This led him to use “high-vitamin butter oil” (in combination with high-vitamin cod liver oil) to help remediate nutritional deficiencies. When Dr. Price plotted mortality statistics for heart disease and pneumonia from sixteen areas of the U.S. and Canada against levels of vitamins A and D in butter, he noticed seasonal patterns; deaths were at their lowest when the butter’s vitamin content was highest (in late spring/early summer, and with another peak in the fall) and conversely, deaths from the two conditions rose when levels of the two vitamins dropped in the winter butter.^{26,27}

BUTTER WARS

In addition to its sacred and medicinal overtones, butter naturally has come to hold an exalted place in the kitchen, whether as a

“flavor enhancement” or simply a “fundamental ingredient.”¹¹ The deep reverence that butter has inspired in cooks and homemakers throughout the ages can be inferred from a description of the butter-making process collected by the Irish Folklore Commission in the late 1930s, which emphasized that the women doing the churning made sure to say “God bless the Cows” before starting on their labors.²⁸ (Back in the day, the Irish also blessed the cows when taking a drink of milk.)

In modern times, McLagan extolls butter for providing a “luscious sensation on the tongue” and a “rich, creamy taste,” asking, “What could be better than a slice of fresh bread slathered with butter? Rich, buttery shortbread, perhaps? A fish doused in a bath of brown butter and capers? Or simple pan juices enriched with a swirl of butter?”⁶ Unfortunately, in different times and places, a variety of forces, both historical and “scientific,” have often conspired to deny eaters these simple pleasures.

The first recorded incident of butter going up against a major “doppelganger” was in 1869 during Europe’s Franco-Prussian war, when the first margarine was created.²⁹ With the war driving up the cost of butter and lowering its availability, Emperor Napoleon III offered a prize to anyone who could invent a practical alternative for feeding his soldiers. The winner, Hippolyte Mege-Mouries, churned beef tallow with milk and called it “oleomargarine.”³⁰ This might not have been so bad (at least in terms of health consequences), but when margarine crossed the pond to the U.S. shortly after its invention

Irish women doing the churning made sure to say “God bless the Cows” before starting on their labors.

BUTTER-MAKING

Before innovations like the centrifugal cream separator, mechanized butter churns and refrigeration technology came along to make industrial-scale butter possible, butter was largely a “small-scale, home-based task.”²² Today, many households still understand the benefits—and pleasure—that come with making small batches of butter. There are many Internet sites that explain the simple process.

In our modern era, some of those advantages include having a say in the (preferably raw, and definitely not ultrapasteurized) cream used; “really good cream. . . from pastured Jersey or Guernsey cows. . . will be more flavorful, contain more healthy CLAs [conjugated linoleic acids], and have a gorgeous yellow color.”²⁹ In terms of the process itself, the key is to “beat the cream” without overbeating it, which can be done with anything from a “jar with a tight-fitting lid that you shake, a bowl and whisk, an electric stand mixer, or a food processor.”²⁹ Cultured butter further enlivens the butter-making process through the use of cream that has first been fermented (for up to forty-eight hours) with a culturing agent such as cultured buttermilk, plain live-culture yogurt, cultured sour cream or crème fraîche.⁴⁵

Elsewhere in the world, the traditional methods of butter-making initiated by long-ago peoples are still in use by modern-day nomads. Thanks to the Internet, even those who purchase industrial-scale butter in neatly wrapped packages can witness what it was like when people made butter the truly old-fashioned way.⁴⁶

in France, instead of tallow, the key constituent became cottonseed oil (and later, other vegetable oils).³¹

History tells us that the “Big Butter” representatives of the day were “horrified”³² by the U.S. incursions of “this greasy counterfeit,”³³ and they enlisted state and federal legislators’ help in fighting back. At the state level, states like Pennsylvania banned margarine, others imposed heavy taxes and some “forced margarine to be dyed bright pink so no one could possibly mistake it for butter.”³² At the federal level, Congress imposed a tax via the 1886 Oleomargarine Act and subsequently passed several other pieces of “remarkably severe” antimargarine legislation that persisted until the 1950s.³⁴ Consumers, for their part, did not initially know what to make of the butter substitute. As Nina Teicholz recounts in *The Big Fat Surprise*,³⁵ butter was “a symbol of America’s pure and hallowed heartland,” and margarine was, therefore, “suspect.” Teicholz adds, “As the first ersatz food to be widely manufactured, [margarine] raised a near-metaphysical question about the essential nature of food.”

Eventually—and ironically—the butter lobby’s efforts against margarine backfired. Margarine’s lower price tag was one factor in its favor, and even the ban on yellow dyes proved no deterrent, as “sneaky” companies began selling white margarine with packets of yellow dye that the lady of the house could knead into the product at home.³² The Great Depression also helped margarine hit its stride by creating butter shortages and rationing; it was in 1930 that margarine consumption outpaced butter consumption for the first time.³⁶ After the federal government dropped its margarine restrictions in 1950 and the American Heart Association endorsed margarine as part of a “prudent diet” in 1960,³⁵ margarine was in an even better position to outsell butter and did so continuously from 1957 until 2005,³⁶ when—thanks to bad publicity about trans fats in margarine—butter started making its dramatic comeback.

Even during the decades when butter-bashing was unrelenting health dogma, there were always dissenters, some of whom managed to lay out the flawed scientific logic in the published literature. For example, in a 1986 article titled “Why blame butter?”, one JA Gorringer noted that though butter had become a “favorite scapegoat” for heart disease, “It is possible to argue at least as plausibly that margarine is the culprit.”³⁷ Gorringer also quoted a witty and apparently nonconformist London physician named Richard Asher as saying, “Do stop bothering about whether your fats are saturated or unsaturated, help yourselves liberally to butter and stop propagating these erroneous legends.” In a general statement that could apply to the faux claims that butter contributes to heart disease, this very same Asher once wrote,

“It is important to realise that ideas are much easier to believe if they are comforting, and that many clinical notions are accepted because they are comforting rather than because there is any evidence to support them. Just as we swallow food because we like it not because of its nutritional content, so do we swallow ideas because we like them and not because of their rational content.”³⁸

Even with butter’s recent rehabilitation, some researchers (ever

mindful of their conventional funding sources) are continuing to hedge their bets. In one article published a decade ago, titled “Is butter back? A systematic review and meta-analysis of butter consumption and risk of cardiovascular disease, diabetes, and total mortality,” the authors’ wishy-washy conclusion is that their findings “do not support a need for major emphasis in dietary guidelines on either increasing or decreasing butter consumption.”³⁹

MORE ERSATZ BUTTER

By 2022, the business website *Quartz*—which bills itself as an “authoritative guide to the most important stories and trends driving business right now”—was pronouncing margarine “over.”⁴⁰ Unfortunately, with the advent of twenty-first century “pharma food” technologies,⁴¹ butter’s enemies—including (who else?) Bill Gates—have some new tricks up their sleeves.

The latest fake butter to get major press is a lab-manufactured synthetic vegan butter “made from CO₂.”⁴² The startup responsible for this culinary travesty, a company cunningly named Savor, has the “blessing” and financial backing of Gates,⁴³ who is helping promote it as “sustainability-focused,” “climate-friendly” and paving the way for—wait for it—“food without farming.” *Smithsonian Magazine*, shilling for Savor, notes that the company also wants to come up with synthetic alternatives to palm oil and coconut oil.⁴⁴

How does “carbon butter” work? The company’s food engineers “take carbon dioxide from the air and hydrogen from water, heat them up, oxidize them and get a final result that looks like candle wax but is in fact fat molecules.”⁴³ In addition to the lab-created “fats,” the final ingredients include “a little bit of lecithin as an emulsifier, and some natural flavor and color.” Not to worry, says Savor, the end result “looks and tastes and feels exactly like dairy butter.” Gates admits, “The idea of switching to lab-made fats and oils may seem strange at first,” but he reassures the public (with somewhat confusing semantics) that “butter made from carbon” will reduce the public’s “carbon footprint.”

CBS News reported in August 2025 that Savor “is working directly with restaurants,

bakeries and food suppliers,” as well as releasing chocolates made with Savor’s “butter.” It’s anyone’s guess whether food labels will disclose the sleight of hand. Gates has ominously hinted that consumers won’t necessarily be given the choice to opt out: “Our plan can’t be to simply hope that people give up foods they crave.”⁴⁴ Gates probably assumes that people won’t cotton on to the fact that they can combat unhelpful food cravings simply by eating generous amounts of real butter.

BACK TO BUTTER BASICS

A blogger who recently reiterated that butter has been “a symbol of good living” throughout most of human civilization argues:

“[I]t is time to set the record straight; butter is packed full of health benefits and outweighs any substitute out there like the highly processed margarine, and greasy vegetable oil-based spreads which don’t even come close to the wholesome, naturally rich, and creamy butter.”²³

The Weston A. Price Foundation (WAPF) agrees. The Foundation has strenuously objected to the nonsensical war on butter since WAPF’s inception. Prompted by the shifting butter zeitgeist, WAPF has declared 2026 the “Year of Butter.” Readers can do their part to ensure that the favorable butter trends continue, by “spreading” the butter message and helping friends and family “melt away” their fears and “stick” with butter. They can also follow Sally Fallon Morell’s frequent advice: we should all spread butter so thickly on our toast that we leave “teeth marks.”

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Homeopathy Journal

HOMEOPATHY AND WEIGHT MANAGEMENT

By Anke Zimmermann, BSc, FCAH

Homeopathy may offer powerful, individualized support in rebalancing the body's vital force and addressing the deeper, energetic roots of chronic metabolic stagnation.

Obesity and its related metabolic and cardiovascular complications continue to be a major health problem in developed and developing countries and present an escalating challenge to global public health.¹

Over 40 percent of American adults are considered obese,² and childhood obesity rates have more than quadrupled since the early 1970s.³ In addition, 58 percent of obese U.S. adults suffer from high blood pressure, a major risk factor for heart disease, and approximately 23 percent have diabetes; these comorbidities greatly reduce quality of life and, for millions of Americans, increase health care utilization and costs.² Obesity is also linked to higher rates of cancers, neurological disorders, chronic respiratory diseases and digestive disorders.⁴

Alongside a fundamental return to ancestral nutrition and lifestyle, there is a compelling case for exploring holistic modalities like homeopathy, which may offer powerful, individualized support in rebalancing the body's vital force and addressing the deeper, energetic roots of chronic metabolic stagnation. In a healthy state, the body's metabolism is fluid and adaptive, constantly adjusting to environmental demands. Homeopathy has the potential to support metabolism and address imbalances in the vital force, considered the primary organizing intelligence in homeopathy. The vital force can be affected by nutrient deficiencies, toxins, electromagnetic frequencies (EMF), stress and other factors.

In this article, I will examine some research on homeopathy to support various aspects linked to obesity, including metabolic support, as well as describe some case studies from my practice. In a previous article for *Wise Traditions*, I covered some homeopathic approaches to obesity as it relates to hypothyroidism and environmental toxins.⁵

GARCINIA CAMBOGIA

Garcinia cambogia (popularly known as *gummi-gutta*, Malabar tamarind or brindle berry) is a tree grown for its fruit in Southeast Asia, India and Africa. The fruit is small, pumpkin-shaped and very sour and is commonly used to add flavor in traditional Southeast Asian cooking.⁶

The peel of the fruit contains a large amount of hydroxycitric acid (HCA) and is used to produce an extract long recognized for its ability to prevent fat production, reduce appetite and increase energy levels, which has made it popular as a weight-loss supplement.⁷⁻¹¹ However, studies have suggested that *Garcinia* supplements may cause adverse gastrointestinal effects in some cases,⁷⁻¹¹ and potentially liver damage or even liver failure in certain individuals.¹²

What about using a homeopathic preparation of *Garcinia* instead, which would theoretically increase the safety margin? This is exactly the question examined in a 2022 study from India. Using low-potency homeopathic preparations of *Garcinia gambogia*, the researchers conducted a small weight-loss study with thirty individuals randomly divided into three comparable groups of ten who received either *Garcinia* 3X (decimal scale), *Garcinia* 6C (centesimal scale) or placebo, taking four globules three times daily for three months.¹³ The investigators measured participants' weight, triglycerides and cholesterol (HDL, LDL and VLDL) before and after treatment. Both treatment groups showed significant weight reduction (an average of 4.8 kilos in the 3X group and 6.8 kilos in the 6C group) as well as notable improvements in lipid profiles in comparison to the control group. During the initial few days, some individuals in the treatment groups experienced diarrhea or constipation that resolved spontaneously.

Although this was only a small trial, it is

promising for two reasons. First, the homeopathic preparations of *Garcinia* would have greatly reduced potential for toxicity, especially in the 6C group. Second, the cost would be much less than buying the herbal extract. An average month's supply of *Garcinia* in supplement form costs thirty to forty dollars, whereas one hundred twenty pellets of homeopathic *Garcinia* can be had for about ten dollars.

NUTRITION + HOMEOPATHY VERSUS NUTRITION ONLY

A study from Mexico published in 2014 examined the effect on weight reduction of using a nutrition-only intervention versus a nutritional intervention accompanied by an individualized homeopathic protocol, assigning thirty participants to each group.¹⁴ The group receiving the nutrition-only intervention lost an average of 0.776 kilos, whereas the group receiving the combination of nutritional and homeopathic treatment lost an average of 2.257 kilos. In the group receiving individualized homeopathic treatment, *Ignatia amara* was the most selected remedy (26.6 percent of cases) as well as the most effective in terms of weight loss.

Ignatia is a remedy often used for emotional stress caused by disappointment, which, of course, everyone experiences in life, and which may lead to comfort eating. Other remedies that were frequently given in the study included *Natrum muriaticum*, *Calcarea carbonica*, *Nux vomica*, *Lycopodium* and *Phosphorus*.¹⁴

Natrum muriaticum is often cited as a remedy helpful with excessive eating. Although it is mostly thought of as a profound grief remedy (especially in people who are more closed and not able or willing to discuss their emotional state), holding on to unexpressed emotions naturally could lead to excessive eating as well as the development of emotional walls, which the body may translate into a protective layer of fat.

BINGE EATING AND HOMEOPATHY

Binge eating is another potential contributor to weight gain and obesity. Binge eating can be a symptom associated with eating disorders such as bulimia nervosa. Eating disorders, in turn, can be associated with various emotional factors as well as body image. (I have some experience

with this from my practice, to which I will refer in the next section.)

An interesting pilot study from the homeopathic department of the University of Johannesburg looked at the results of homeopathic treatment for binge eating in adult males between the ages of eighteen and forty-five.¹⁵ Many of the men reported night eating and disturbed sleep patterns as well. Individualized homeopathic remedies were given to each participant for six weeks. All participants reported a decrease in binge-eating severity and frequency as well as better general health, including improvements in sleep habits, libido, blood pressure, confidence levels and overall sense of well-being. Remedies given included *Natrum muriaticum*, *Phosphorous* and *Sulphur* (all given twice each), as well as *Arsenicum album*, *Aurum metallicum*, *Staphysagria*, *Lachesis* and *Rhus toxicodendron*.

One of the study participants, a twenty-nine-year-old editor, would often lack appetite and skip breakfast, but he drank ten to fourteen cups of coffee or cola as well as a liter of milk a day. He described drinking cold milk as relaxing and had a strong aversion to drinking water. He would binge in the afternoon on chocolate biscuits and also ate three slabs of chocolate a week. He was very active and productive and enjoyed many creative hobbies in his spare time. *Rhus toxicodendron* in the LM1 potency, once daily, was given based on his industrious nature, desire for cold milk and aversion to drinking water. By the third follow-up consultation, he reported that his cravings had decreased, and by the fourth follow-up, they had disappeared altogether and he stopped drinking milk.¹⁵

IN SEARCH OF MOTHER'S LOVE: A SACCHARUM OFFICINALE CASE

In April 2025, I saw a six-year-old boy named Troy for excessive eating. The child was of average height for his age but weighed eighty pounds. (The average weight for a six-year-old boy is between thirty-five and sixty pounds.) His mother said, "He just can't stop eating. He is constantly asking for food and cries if we do not give in. We had to put locks on the fridge and cupboards to keep him from taking excessive food. At school he will beg his classmates

The group receiving the nutrition-only intervention lost an average of 0.776 kilos, whereas the group receiving the combination of nutritional and homeopathic treatment lost an average of 2.257 kilos.

The archetypal situation of *Saccharum* is a desperate search for love, affection and attention, with a fear of not deserving the mother's love and being abandoned by her.

for food and treats, and he eats whatever they don't consume. We've taken him to doctors, but there is nothing wrong organically."

Troy especially liked sweets and was very attached to his mother. He had suffered from separation anxiety until fairly recently. He also still sucked his thumbs and fingers, especially at night.

Pregnancy, labor and delivery had been uneventful. He had received normal childhood immunizations. He lived in a stable, loving home, and there was no history of emotional trauma or abandonment. However, I suspected his excessive eating might have an emotional cause, and so I asked his mother about her own emotional history, as the child's was unremarkable. She shared that she had grown up in difficult circumstances and that her mother had left the family when she was only five years old. Thinking that perhaps her emotional trauma of having been left had transferred to her son, I selected a remedy made from cane sugar called *Saccharum officinale* for him. *Saccharum officinale* was popularized by the Dutch medical doctor and homeopath Tinus Smits, who described the archetypal situation of *Saccharum* as a desperate search for love, affection and attention, with a fear of not deserving the mother's love and being abandoned by her.¹⁶

Troy started taking *Saccharum* 30C once a week. After only one month, his mother reported that his eating had significantly decreased,

and they no longer had to lock the fridge and cupboard. Over the next three months, he lost ten pounds and started to slim down noticeably. He then needed *Saccharum* in 200C and 1M potencies. A year later, he is still losing weight, albeit more gradually.

RAVENOUS: A CASE OF CORVUS CORAX

The father of a young man on the autism spectrum consulted me about his son's excessive eating. Joaquim could eat a whole loaf of bread and a jar of peanut butter at a time. He also binged on ice cream, sometimes eating an entire quart at one sitting. He could go through the fridge and keep eating until all the food was gone.

He was slightly overweight but also had digestive issues, which his father thought were worsened by the binge eating. This reminded me of the homeopathic proving of Raven's Blood (*Corvus corax principalis sanguis*) by Greg Bedayn, described in *Birds: Homeopathic Remedies from the Avian Realm* by Jonathan Shore and co-authors.¹⁷ Bedayn described his final meeting with the provers at his office:

"I remember how the eight provers, one-by-one, got into the 'hot seat' and reported their individual experiences to the assembled throng, and how most reported what became a similarly hilarious experience for all. Each prover basically told his/her story

HOMEOPATHY AND WEIGHT LOSS

GARCINIA GAMBOGIA 3X or 6C: Three to four globules, three times a day.

CALCAREA CARBONICA: Potentially helpful in some cases of sluggish metabolism with a lot of flabbiness, especially around the mid-section. The person may love breads, pasta, cheese and eggs.

CORVUS CORAX: A potential remedy for binge eating if the person needs to finish all the food in the fridge.

IGNATIA AMARA: May be helpful for emotional and binge eating after sudden shock, grief and betrayal. Can have a craving for cheese and an aversion to fruit.

NATRUM MURIATICUM: May be helpful for sensitive, introverted people who don't heal well from grief and don't like consolation. They may crave salty and starchy foods.

NUX VOMICA: May overindulge to combat stress. Can be type A people who drink and eat too much to compensate for their high-octane lifestyles.

PULSATILLA: May eat and binge to console themselves out of loneliness or depression. Often craves ice cream and other sweet and creamy foods.

SACCHARUM OFFICINALE: A remedy made from cane sugar, may help with excessive sweet cravings. The patient may feel abandoned and isolated and not deserving of love and attention at a deep level.

of how their appetites had *greatly* increased during the proving—one prover had even developed the habit of standing in front of his open refrigerator, methodically eating his way through its contents, unable to stop until the last kernel of leftover rice casserole etc. was gone. It wasn't actually funny until about the second or third prover confirmed that same symptom and the provers' group howled with laughter over the peculiar similarity and then the next prover confirmed it again and so on. The next day I was driving into Berkeley deep in thought over what the similarity of increased appetites could mean when I suddenly realized the rubric was 'ravenous appetite' and I nearly drove off the road when I just suddenly realized the source of the word ravenous!"

I gave Joaquim *Raven* 200C and within a short period of time, his binge-eating was greatly reduced!

CONCLUSION

Obesity is a multifactorial issue, the causes of which include increasingly processed and nutrient-depleted food, environmental toxins, excessive food consumption, lack of exercise and various metabolic and emotional factors. Homeopathy has the potential to be a useful adjunct for weight loss by providing remedies such as *Garcinia gambogia* that may help to curb appetite, reduce fat deposition and improve lipid and blood sugar parameters. Constitutional remedies may also help with underlying energetic and emotional imbalances that are leading to excessive eating. 

Anke Zimmermann, BSc, FCAH, is a professional homeopath with thirty-five years of clinical experience and a large international online practice. She has a special interest in children's developmental and behavioral challenges and also teaches courses on homeopathic approaches to autism and other complex challenges. She lives on beautiful Vancouver Island in Canada. For more information, please visit her website at ankezimmermann.net.

Disclaimer: This article is not intended to diagnose or treat any disease or condition. It is for educational purposes only. The author advises readers to consult with a qualified health care professional prior to taking any homeopathic remedies.

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The Wise Traditions Pantry

THE OTHER WHITE MEAT: REDISCOVERING THE HEALTH BENEFITS OF TRADITIONAL CHEESE AND FERMENTED DAIRY

By Dr. Bill Schindler and Christina Schindler

For almost every food that humans consume, we need to do something to make the food safe and make the nutrients bioavailable.

In 1987, a Nebraskan advertising agency crafted the clever tagline and campaign, “Pork: The Other White Meat,”¹ to help the National Pork Board promote pork products. It was the third most influential ad campaign for food in U.S. history. But even more successful was “Got milk?”—considered by many “one of the greatest ad campaigns of all time.”²

In this article, we are being a bit playful in rebranding cheese as “the other white meat,” but the fact is that our work and research with dairy—including extensive travel and time spent living with indigenous groups—has taught us the power of traditional cheese and other forms of fermented dairy. We try to apply what we’ve learned at Modern Stone Age Kitchen (modernstoneage.com), our sourdough bakery, scratch-made restaurant and coffee shop in Chestertown, Maryland. We opened the restaurant—coming from former careers as an archaeology professor (Bill) and educator (Christina), and with no prior business experience—to dedicate ourselves to ancestral cooking techniques and real food.

BILL: FROM ROCKS TO FOOD

As an experimental archaeologist, my (Bill’s) training and specialty is in prehistoric technologies such as stone tools, pottery and tanned hides. To learn how to make stone tools proficiently, you have to practice every day, so for years, I spent at least one hour a day literally banging rocks in our garage. When our three children were all under five, Christina made the not-unreasonable request that I find a way to rechannel my passion for stone tools into something that would be more relevant to our family. After reflecting for some days, I suddenly had a “light bulb” realization: almost every single prehistoric technology in the entire world had something to do with getting, processing, storing, sharing or redistributing *food*. From

a human biology and evolutionary standpoint, stone tools were game-changers.

We humans think of ourselves as being at the top of the food chain, and we are—but it’s not because of our nails or eyesight or muscles. We don’t have claws to dig tubers, strong teeth to crack nuts or rip carcasses apart, the ability to fly to reach things that are up high, or the speed and strength to jump on animals. However, we have invented tools that have allowed us to overcome our physical limitations. Every single hunter-gatherer group had some version of a digging stick to get tubers out of the ground. Early humans invented ladders and climbing devices to get honey and eggs out of trees, and for hunting, they came up with bows and arrows, atlatls, boomerangs and throwing sticks. The earliest stone tools were sharper and more durable than the canine teeth of any animal. These technologies turned out to be the basis of every traditional food system in the world.

I also came to a second and equally important realization: for almost every food that humans consume, we need to do something to make the food safe and make the nutrients bioavailable. Humans, for example, don’t have a rumen (referred to by some as a “fermentation vat”³), or teeth that can break down tough vegetable materials like cows do when they chew. However, humans have figured out how to replicate what ruminants do by developing methods of fermentation. Those two realizations are what led our family to start making cheese and other dairy ferments.

DIGESTIBLE DAIRY

A lot of factors shape people’s feelings about what they should be eating, including their perspectives on traditional food. Some people say, “I’m only going to eat the things that humans are designed to eat,” but that approach is problematic. Strictly speaking, there

are only three things on this planet that are there for the express purpose of being consumed by something else: milk, honey and fruit (and only ripe fruit, at that).

We know that humans have had some sort of relationship to bovine milk for at least forty-nine-thousand years, because scientists have determined that red ochre (a natural pigment used throughout prehistory for cave paintings) used milk as a binder.⁴ We also know that human infants (and other mammals) are perfectly designed to digest dairy. Mother's milk is at body temperature, and it is teeming with live bacteria that thrive at that temperature. The moment the milk passes into the baby, the milk starts fermenting, and the baby starts producing different enzymes that turn the milk into the most nutrient-dense, bioavailable food on the planet. These enzymes include lipase (to break down the fat), lactase (to break down milk sugar) and, when the milk makes it into the baby's stomach, protease, which "denatures" the proteins (meaning takes the proteins out of their natural state), coagulating the milk to slow it down in the digestive tract. Nature has figured out that if the milk coagulates and turns into a jello-like substance, it will ferment longer and take longer to chemically and physically break down, meaning that when it goes into the small intestine, it is in the right state for the nutrients to be properly absorbed.

Fascinatingly, however, every single mammal on this planet, as soon as it gets weaned off of its mother, loses the ability to produce those enzymes in the same way. This fact has prompted some people to question whether we should be consuming dairy as adults. To ponder that question, consider how gut-brain expert Steven Gundry describes the digestive tract.⁵ He says that when you put food in your mouth, you're putting it into something analogous to the Lincoln Tunnel. The only thing you can guarantee is that eventually it will come out the other end, but in order for you to get the nourishment that you need, your gut has to be healthy, and the food has to be broken down properly.

The reality is that adult digestion of dairy is not the same as infant digestion. Health officials estimate that roughly 68 percent of the global

population has lactose malabsorption.⁶ Even if you are lactose-tolerant, you still do not have the mechanisms in your digestive tract that allowed you to fully digest milk as an infant. [Editor's note: *Studies of lactose intolerance generally ignore the distinction between pasteurized (or ultrapasteurized) milk and raw milk. Some surveys and anecdotal evidence suggest that people with "lactose intolerance" often do fine when consuming raw milk.*⁷] Does this mean that adults shouldn't drink milk? Absolutely not! It doesn't mean that we should avoid grains either. What it does mean is that we want to replicate natural biological processes to make dairy and grains as safe and nourishing as they can possibly be.

Raw milk is a truly great food, but as adults, if we want to maximize its nutritional value and the benefits of dairy in our diet, then it makes sense to replicate the process that our bodies went through as infants through fermentation. Whether in the form of cheese, kefir or yogurt, fermented dairy is easy to digest, nutrient-dense, bioavailable, loaded with probiotics, low-carb and, depending on the duration of fermentation, either low-lactose or lactose-free. At a time when the "snack food" market is exploding with unhealthy choices, cheese and fermented dairy also make for healthy, satiating snacks, particularly great for calcium utilization and bone health.

TRAVELS WITH CHEESE

In our research and travels, we have extensively studied traditional cheesemaking, because we wanted to make sure that we were making our own cheeses in a proper way. This has led us to witness and taste some fascinating cheeses. Places where we have sampled interesting cheeses include Nairobi, Kenya; Georgia in eastern Europe; Sicily, where they make delicious *caciocavallo*⁸ (a stretched-curd cow's milk cheese considered one of the most ancient cheeses ever made in the Mediterranean); and Germany, where a cheese called *Milbenkäse* has the nickname "mite cheese" in honor of the mite-excreted digestive enzymes that cause the cheese to ripen. There, we even met Helmut Pöschel, a retired biology teacher who is the last

At a time when the "snack food" market is exploding with unhealthy choices, cheese and fermented dairy make for healthy, satiating snacks.

remaining commercial maker of *Milbenkäse* and who also created a one-room Milbenkäse Museum.⁹ “Mite cheese” is traditionally consumed with buttered rye bread and beer.

Another example of an insect-facilitated cheese is the Sardinian pecorino (sheep’s milk cheese) called *casu marzu* (“rotten cheese”). In 2009, the *Guinness Book of World Records* called it “the most dangerous cheese” in the world, and because of this dramatic reputation, it is banned for commercial sale in Italy and several other countries, including the U.S.¹⁰ (To us, the most dangerous cheese in the world is Velveeta!) The reason food authorities rate it as “dangerous” is because of the involvement of maggots. When Sardinian cheesemakers cut the curds and press the cheese into a wheel, they make little divots on the top to introduce special cheese skipper flies (*Piophilidae*) that lay eggs in the divots. Most cheesemakers want to keep bugs away, but the Sardinian cheesemakers invite them in. When the eggs hatch, they turn into maggots, and the maggots crawl through and digest the cheese, transforming it into something soft and creamy with a unique texture and flavor—what CNN described in 2025 as “intense with reminders of the Mediterranean pastures and spicy with an aftertaste that stays for hours.”¹¹ You are actually supposed to eat the cheese when the maggots are still alive and crawling through it, because that means you can be confident that the cheese is still good. (Because of the commercial ban, *casu marzu* has become a bit like moonshine in West Virginia, something made in the back hills.)

When it comes to learning how to replicate natural biological processes so that adults can safely and efficiently get incredible nutrition from one of nature’s most perfect foods, we can learn from another Sardinian cheese called

callu de cabrettu,¹² which comes from the stomach lining of young goats and is made in the epicenter of the original Sardinian “Blue Zone”—the first so-called Blue Zone (places characterized by exceptional longevity) ever identified. (Note that we have visited multiple Blue Zones, and the information often disseminated about their “plant-based” diet is 100 percent false. They are not eating minestrone soup! When we were in Sardinia, where longevity was very evident, the amount of animal foods eaten on a regular basis was “mind-blowing,” and everything we ate was harvested, slaughtered, butchered and made from scratch by the people or their relatives sitting around the table.)

In the mountainous Sardinian village we visited, the shepherds make *callu de cabrettu* by taking an unweaned goat and bringing it to its mother. After it fills its stomach with milk, they harvest the goat, pull the stomach out and hang it up for ten days, letting the stomach acids convert the milk to cheese.¹³ Ten days later, they eat the cheese. Now, think about what happened. First, the goat was unweaned, so it was still creating all the needed enzymes—the lipase, lactase and the chymosin (a component of rennet) that coagulates the milk. Second, the milk was completely raw; it came out of the mother goat at body temperature and went into the young goat’s stomach, enabling all of those chemical reactions to occur. Third, the shepherds gave it the right amount of time to ferment. We would add that it was a very sacred process characterized by deep respect for the animal, and they used every part of the animal, nose to tail.

REPLICATING THE NATURAL DIGESTIVE PROCESS

As our Sardinian travels confirmed, every infant mammal makes cheese in its stomach. It’s part of the natural digestive process. The simple process that we observed illustrates that, as cheesemakers, we are simply trying to replicate that digestive process outside of the body. This involves a few basic steps:

1. The first step is to make sure the milk is at body temperature. If you are milking your animals directly, the process starts automatically, but for the majority who don’t have animals and are starting with refrigerated milk, you will be warming it to one hundred degrees.
2. The second step is to make sure that fermentation happens. If you are using very fresh raw milk (less than two days old), you can rely on the bacteria naturally present in the milk to control the fermentation. However, if you have raw milk that is more than two days old or

TRADITIONAL RENNET

Bill learned a lot about cheesemaking from David Asher, a former farmer and author of *The Art of Natural Cheesemaking*, who teaches people how to use in-house starter cultures and natural rennet from calves and goat kids. Asher was once asked for his opinion about vegetable (microbial) rennets. Those rennets will work, but Asher does not use them. The primary reason is because traditional rennets acknowledge a dairy industry reality, which is that male baby cows die. Farmers who make cheese keep the female babies so that they will have more milk (and be able to make more cheese), but they kill and eat the male calves. Because the calves are unweaned, the farmers can then use the animals’ stomachs to make rennet. This is the cycle. Denying this is just one more way that people end up disconnected from the reality of our food system.

pasteurized milk, you will need to inoculate it with some sort of bacteria. (If you have to use pasteurized milk, the only milk that will set is low-temperature, vat-pasteurized and non-homogenized milk.)

3. When the curd is set, you will cut the curd and take out the whey. Then, by controlling the variables of temperature, hydration, humidity and aging time, you can make different kinds of cheeses.

Fresh raw milk naturally contains the bacteria needed to make every cheese in the world—except for blue cheese. (If you want to make blue cheese without buying a culture, you can take a high-quality sourdough bread, let it mold and use the mold.) In addition, the lipase naturally present in raw milk provides the service of breaking down the fats properly, while *Lactobacillus* bacteria eat the lactose as food. Over time, as the lactobacilli eat more lactose, the pH goes down (that is, becomes more acidic), which is necessary in all cheesemaking.

The lower the pH, the less lactose remains. A fully fermented dairy product is a lactose-free product. Consider Mongolia: out on the steppes, dairy from camels or yaks is part of the daily diet—but nobody drinks milk. They have almost 100 percent lactose intolerance, but it's a non-issue because they ferment the milk.

FERMENTATION CULTURES

One of the things you need to do when you are fermenting dairy is to match up the bacteria that work best at different temperatures with the type of fermentation that you are doing. You can think about one hundred degrees (body temperature) as a sort of dividing line. Although it is the ideal temperature for *Lactobacillus* bacteria to produce fermentation, there is a range below one hundred degrees, and a range above it, where certain bacteria will still work. From about one hundred to one hundred thirty-five degrees is “thermophilic” (“hot”) fermentation. From about one hundred degrees down to about sixty-eight degrees is “mesophilic” fermentation. Kefir, left to ferment on your countertop, is an example of mesophilic fermentation.

Some fermentations can happen in either one of these two ranges. For example, you may

be familiar with thermophilic yogurt, where you have to hold the yogurt at a constant temperature for a certain number of hours, but you can also make a mesophilic yogurt at room temperature. All you have to do is stir the culture into the milk and sit it on the counter overnight. In Kenya, a traditional “ash yogurt” called *mursik*¹⁴ is fermented in a smoked gourd for anywhere from three days to three months at room temperature.

Raw milk that spends more than two days in the refrigerator is a different food than when it first goes in. It's not bad to drink, but the vitality and even the community of microbes in that milk will be different after several days in the refrigerator. If you are making something requiring bacterial fermentation, and you are using raw milk more than two days old, you will need to introduce some kind of culture—for example, clabber, kefir, a freeze-dried culture, yogurt or buttermilk—to ensure fermentation. Even if you have the best raw milk, the lactobacilli that are perfectly designed to operate at one hundred degrees will go almost completely dormant after more than a couple of days.

If you have access to fresh, high-quality raw milk that has never been cooled down—that is, it is still warm from the animal—one of the best things you can do is let some of that milk sit on the counter overnight to make clabber, a type of naturally thickened, soured milk that makes a supercharged dairy culture. By the next day, it will contain plentiful good bacteria ready to perform all sorts of work. Even when traditional cheesemakers ferment raw milk taken directly from the animal, many will also keep a clabber culture going by feeding milk with a little bit of the clabber culture. You can keep it going like a yogurt culture. If you have week-old milk in your refrigerator, you can even put some of the clabber in it to reintroduce strong, beautiful bacteria.

If clabber is the number-one choice for a consistent and powerful culture, kefir is number two. You can use kefir to make every single cheese on the planet, as well as other ferments such as yogurt. If you are going to keep one dairy culture going in your house, let it be kefir.

As a third option, you can buy freeze-dried cultures from various Internet sources. For cheesemaking, this is not always ideal, in part

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because most companies are not providing the complete communities of bacteria—the heirloom cultures—that have been living together for thousands of years. Instead, they cherry-pick a few. That is the downside, but the upside is that if you are new to cheesemaking, freeze-dried cultures can be a user-friendly way to give it a try. Fortunately, there are also a growing number of businesses that offer heirloom cultures. In addition, you will need to order some rennet. (For a good source of natural liquid calf rennet and cheese cultures, we like thecheesemaker.com.) Rennet can stay in your refrigerator for about a year, and cheesemaking cultures will last about a year in the freezer.

Traditional cheesemaking took place in vessels made of wood or ceramic, or in animal skins, which allowed it to harbor incredible bacterial diversity. Because of this, cheesemaking got better over time. Unfortunately, at the Modern Stone Age Kitchen, regulations don't allow us to use anything that is permeable, so we have to use metal, plastic or glass.

VITAMIN K2

Weston Price talked about “activator X,” and thanks to people like Chris Masterjohn and Sally Fallon Morell, we now know that activator X is vitamin K2. Vitamin K2 is important for many reasons. It directs calcium to bones and teeth, it plays a synergistic role with vitamins A and D, it's good for inflammation and it's good for metabolism.

Although there are a small number of other food sources of vitamin K2, traditional fermented dairy—especially raw, full-fat,

long-aged cheese¹⁵ and kefir¹⁶—remains one of the richest natural sources of vitamin K2 that our bodies can use. Fermentation, in some cases, quadruples the amount of K2 in the food. Grassfed cows will create a little bit of K2 in their bodies from the K1 that they're eating, but it is fermentation that really gets K2 production going. In fact, K2 will even be produced during fermentation of milk from grain-fed cows where no K1 is present (although milk from grass-fed cows will generate larger amounts). We are not suggesting that people drink milk from grain-fed animals, but we are saying that this process is so powerful that it even happens when fermenting non-ideal milk. This also means that cultured butter made from cows that didn't eat grass will have more K2 in it than sweet-cream butter made from grass-fed cows. The culturing process will produce much more K2 than is naturally present in the cream, even from amazing cows.

There are a lot of different forms of K2, and although there is usually only one form in the milk itself beforehand, bacterial fermentation in dairy produces most of the others. Importantly, vitamin K2 is produced many times more through mesophilic versus thermophilic fermentation. If you are looking to fermented dairy as a source of K2, you should be making yogurt on your countertop and not in your Instapot. (We recommend the heirloom yogurt starter cultures from Cultures for Health [culturesforhealth.com].) In the Republic of Georgia (at one time home to one of the oldest living populations in the world), they make a mesophilic yogurt called *matsoni*.¹⁷ It is incredibly delicious, and a

A NOTE ABOUT VINEGAR

Fermentation involves chemical and physical changes that release nutrients and make food more digestible. When you use vinegar as a food preservation method, it shortcuts fermentation and produces something that is not as nourishing. A fermented pickle will always be much healthier than a vinegar-preserved pickle. The same holds true for cheesemaking.

Unfortunately, mozzarella and other stretch-curd cheeses are some of the most bastardized cheeses out there, at least in the U.S., because most of them use vinegar (or citric or lactic acid) as a shortcut to instantly drop the pH. This bypasses the incredibly valuable fermentation process, which should take from five to eight hours and allows the *Lactobacillus* bacteria to eat the lactose, create lactic acid and drop the pH more gradually. In a non-shortcut process, milk typically starts at a slightly acid pH of just below seven (perhaps 6.8), and it is not until the pH has fallen to 5.2, hours later, that you can stretch it and make your bowl of fresh mozzarella. Mozzarella made with vinegar is a completely different-tasting food that is not as healthy or nourishing. It is not a real cheese, and it is not even a real food! If you are lactose-intolerant, you might as well drink a glass of milk, because all the lactose is still there. Even restaurants that say they make their cheese “from scratch” often are simply buying ready-made curd in a package and stretching it in-house.

lot more nutritious than the thermophilic yogurt that most people make. (Cultures for Health has an heirloom *matsoni* culture.)

The longer the fermentation, the higher the production of K2, which is why aged cheeses are so rich in K2. This is also why we ferment the yogurt we make at Modern Stone Age Kitchen for a full twenty-four hours. The same holds true for kefir, which is typically a twenty-four-hour fermentation. And as already mentioned, a longer fermentation time also plummets the lactose. Notably, K2 production only happens in the presence of intact full-fat molecules, so it will not happen properly in homogenized milk.

CHEESE FOR ALL OCCASIONS AND PALATES

One of the huge benefits of cheese is the variety of flavors, textures and aromas, all of which depend on where you are getting your milk, from what type of animal and how the cheese is made. When we started making cheese and fermenting dairy in our family, we were also interested in the economics of homemade cheese. (Think about the quantities of yogurt, cheese sticks, sandwich cheese and so on that a family of five is capable of consuming!) It's very costly to buy a fresh burrata (billed as a more "luxurious" mozzarella), but much more affordable if you get the milk and make it yourself.

At the restaurant, our hands are tied in numerous ways (for example, we are not allowed to use raw milk, and we're required to introduce a new culture with each batch), but what you can do in your own home is going to be a thousand times better than almost anything you can buy. In terms of making cheese at home, we have also found that it is very forgiving—and it makes people happy. Sourdough breadmaking can sometimes be a bit challenging for beginners, but homemade cheese doesn't have to be perfect and virtually always tastes good! 

Dr. Bill Schindler is an archeologist, anthropologist, chef and the author of Eat Like a Human. As a global leader in ancestral foodways, he bridges the gap between traditional diets and modern health by researching, preserving and applying ancient food techniques (such as whole animal butchering and cooking, fermentation and indigenous food processing) through his work at Modern Stone Age Kitchen and Food Lab. He collaborates with traditional communities worldwide, sharing their wisdom through teaching, public speaking and media. His mission is to reshape the modern food system by making ancestral knowledge relevant, practical and impactful. Christina Schindler is a former educator of twenty years who wears many hats as Modern Stone Age Kitchen's CEO, including applying her expertise in technology and systems to run marketing and operations. She also serves as president of the nonprofit MSA Food Lab dedicated to nourishing, ethical and sustainable food systems. Modern Stone Age Kitchen offers classes on topics ranging from cheesemaking to butchering and hosts residential internships. It was the first restaurant to earn a 12-spoon rating from the Weston A. Price Foundation's restaurant rating guide!

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Wise Traditions Podcast Interview

INTERVIEW WITH COLLEEN FLYNN

NO GLP-1 SHOTS NEEDED: SUPPORT YOUR BODY'S SYSTEMS NATURALLY



HILDA LABRADA GORE: A popular new class of drugs called “GLP-1 agonists” (including Wegovy and Ozempic) promise to deliver weight loss by decreasing appetite and curbing cravings—but these injectable medications have serious side effects. Colleen Flynn, a functional nutritionist and gut health specialist, argues that there are natural ways to improve nutrient absorption and optimize the body’s hormones for lower inflammation, better gut health and healthy weight loss. Bile, polyphenols and sunlight all play important roles.

Colleen, please describe the experience that one of your clients had with these drugs.

COLLEEN FLYNN: A client came to me who had been on Wegovy for five months. He was definitely “overprescribed”; he was at the point where he literally could not force down more than four hundred calories per day. He could not even drink water because the GLP-1 drug, which affects gut motility, had paralyzed his stomach. His hair was falling out. He had lost a significant amount of muscle mass—losing more muscle than fat—and he was an older man. As we age, building that muscle back is really hard. He spoke without energy, in a slow monotone, because, at four hundred calories, his nutrients were not getting in. He also was severely constipated, with a bowel movement only every two weeks. This may sound like an extreme example, but this is happening—and it is not being talked about.

HG: Why not?

CF: There are many reasons. First, GLP-1 is “hot” right now. If you go on TikTok, it is like the Wild West. It is shocking—everyone feels like they have to be on it, and everyone talks only about the positive benefits. “I am skinny. Look at me, I have lost weight.” In the wellness

world, we know that there is good and bad to anything that comes out. In this case, there are some potential benefits (for example, I believe GLP-1, if used properly, can help some people whose metabolism is shot from years of abuse), but the negatives are not talked about as much as they should be. Second, there is the money side of it, with heavy marketing especially to menopausal and perimenopausal women.

HG: Another thing that no one talks about is the fact that our bodies actually make glucagon-like peptide-1 (GLP-1).

CF: Yes. GLP-1 is a natural hormone in our body, a short-chain peptide. I have encountered people who had no idea that GLP-1 was a hormone that our body makes on its own. They thought it was just a medication. To me, the fact that our bodies make it is exciting because that means that we can boost it naturally and do not need to take medications that come with horrible side effects.

HG: Why is GLP-1 important for metabolism, appetite and blood sugar regulation?

CF: When we eat proteins, they are broken apart into amino acids. They reconfigure and make all these cool things in our bodies. One of them is GLP-1, a thirty-amino-acid peptide hormone. It is produced mostly by the L-cells in the gut—in the mucosal lining—and they are nutrient-sensing. When you eat food, the food goes down and hits those L-cells; their response is, “We have nutrition coming in, let’s send out the GLP-1.”

GLP-1 is important because it works throughout the entire body. It is not just for weight loss and appetite control, although appetite regulation is the role that most people know about. (If you inject it, you have no appetite; you do not eat, and you lose weight.) It also works

Hilda Labrada Gore was the host and producer of the Wise Traditions podcast for the Weston A. Price Foundation from 2016 to 2026. Although, no longer the host, we chose to share the transcript of this episode because it covers a topic which is very popular currently and we thought it important to share this information.

Our new podcast host is Kendall Nelson.

on blood sugar and metabolism. It works on digestion because it lets the body know when to secrete bile and digestive enzymes. In addition, it works on the mitochondria and energy production. Finally, it works on the brain and nervous system, and there are studies looking into how it could help people with drug and alcohol addictions.

HG: What is making people so desperate to take GLP-1 drugs for weight loss, and what is making healthcare practitioners prescribe them?

CF: In the modern world, people are not living the way we are supposed to. We are not focusing on the essentials: sunlight, a nutrient-dense diet and movement. GLP-1 shots are a “quick fix.” A lot of people just want to get skinny, and they are not thinking about all the other things that they are missing on the journey to get thin. The drugs seem like an easy way to lose weight. As for practitioners, some just want their clients to be happy and want to help them reach their weight-loss goals. I can see why some practitioners use it as a little boost to push their clients along, but they need to focus on the reasons behind why someone’s body is not producing enough of its own GLP-1 in the first place. We should not need to inject it into our bodies.

HG: Why are so many people having trouble making natural GLP-1?

CF: For our body to do anything properly, it needs to have all of the pieces. This includes proper light regulation (getting the right types of light throughout the day), getting good sleep, having a healthy gut microbiome, digesting food properly, living in more of a parasympathetic state (that is, being calm in a rest-and-digest state instead of being stressed out all the time) and eating a nutrient-dense diet. Many Americans are into quick fixes. They do not want to put the time into preparing food and eating the way that we are supposed to.

HG: I have heard some experts say that unless the basics are dialed in first, the synthetic peptides that practitioners are doling out will not help people.

CF: They might help in the short term, but many people plateau. Then, they need to keep raising the dose, which brings more side effects—and then they still plateau. Even if you are choosing to take the injections, you need to work on why your body was not making GLP-1 in the first place, so that you can lower your dose or eventually get off. It is also an expensive drug, and we do not know all the long-term effects yet.

Here is a fascinating difference between natural GLP-1 and GLP-1 medications. Ordinarily, you eat, and within thirty to sixty minutes the L cells are activated, and GLP-1 comes out. It is broken down by enzymes in just a few minutes, and then it is done. When you take the injections, it is alive in your body for up to one hundred eighty-three hours [its half-life in humans], which is approximately one week. You have to think about how that is throwing off the normal domino effect. In the body, something happens and is supposed to trigger the next thing. If GLP-1 is there for one hundred eighty-three hours, what is going on there? This is a big deal.

HG: I have heard that just like with antidepressants, which often flatline a person’s mood—the lows are not as low but the highs are also not as high—the same thing happens with the GLP-1 drugs. Apparently, the emotions get flatlined. You referred to your client and how his voice had become slow and monotone.

CF: People are noticing that when they do the GLP-1 injections with a higher dose, their cravings for alcohol or gambling go down, but it also takes away their drive. It takes away the desire for the dopamine hit, and that is necessary for a person to want to take action, be interested and connect with people. There are studies showing how GLP-1s are actually interfering with people’s relationships as well, because their whole personality and their drive to do things shifts. Some people have said that it makes them just “not care.” Not only do they not care about eating, they do not care about anything, which makes sense, because food gives life. The desire to eat is the desire to be alive. People think that it is great that they are not hungry. But I love hunger. It means my body is telling me, “Let’s

Some people have said that [taking GLP-1 injections] makes them just “not care.” Not only do they not care about eating, they do not care about anything.

Polyphenols
are
beautiful
makers and
supporters
of GLP-1
production.

go! Fuel me up. Let's go do things." This complete subversion of appetite is not normal, and it is not healthy mentally or physically.

HG: What are the common side effects of GLP-1s?

CF: The one you just mentioned—the effect on mood—is a big one that many people do not know about. There's also brutal nausea, vomiting and constipation. I hear that a lot. Gallbladder issues. The muscle loss is a big one. There are potential thyroid concerns. Nutrient depletion because you cannot eat enough, and you cannot absorb. Hair loss is huge. Many women are losing their hair because they're not eating enough. Loose skin, dehydration, bone loss, and possible gut microbiome disruption as well.

HG: How many people do you see who are on these drugs?

CF: Luckily, we do not have many in my practice. Many people come to us knowing that I am all about doing things naturally. However, I see it with my friends, with people I grew up with, family, just out and about in Austin. Sometimes, if the weight loss is a little too dramatic, you can tell who is on them. I hear it marketed as "the skinny shot."

HG: Let's talk about how we can naturally support our production of GLP-1. How can we support our digestion so that we are absorbing the nutrients that we need for a healthy, stable weight?

CF: The gut is the biggest player here because GLP-1 is produced in the gut. Again, it is nutrient-sensing. This is where we go back to how we are eating. It is as simple as chewing your food and eating in a calm state. If your body is rushed, the nutrient signaling is going to be off. GLP-1 is also very dependent on the health of your gut mucosal lining because that is where the L cells are.

This is where it is important to make sure that you have a gut free of toxins. Make sure you are not taking in toxic foods, pesticides,

fake sugars or too much sugar and alcohol. Those are going to weaken the gut mucosal lining, which means less production of GLP-1. Gut irritation plays a role as well. If we have small intestinal bacterial overgrowth (SIBO), irritable bowel syndrome (IBS) or food sensitivities, all of these are going to come into play. We want to make sure we are focusing on having a really diverse gut microbiome.

In my practice, we often run a "GI Map" to assess the microbiome. *Akkermansia muciniphila* is one of the key players in the production of GLP-1, but perhaps half the people come back with less than detectable levels of *Akkermansia* and other keystone bacteria. If you do not have the right bacteria, you are not going to have a healthy gut mucosal lining. The L cells are not going to work properly. You are not going to produce a sufficient amount of GLP-1.

HG: Where do you get more *Akkermansia*?

CF: *Akkermansia* is actually not in foods, which makes it a little more difficult to get. It is one where you could benefit from taking supplementation, but you also need to feed it. Like any bacteria, it needs food, or it is going to work its way out. That is where polyphenols come into play. They are beautiful makers and supporters of GLP-1 production. Overall, making sure your gut does not have a lot of dysbiosis is key because that will affect the short-chain fatty acids, especially butyrate, and all of these come into play for a healthy gut and sufficient GLP-1 production.

HG: Let's talk about polyphenols.

CF: Polyphenols are like precision prebiotics, and they help reshape the entire gut ecosystem. They are found in plant foods. Some examples would be berries, dandelion, citrus, walnuts, cranberries, pomegranate, olives, cinnamon and green tea. They are huge feeders of the beneficial species like *Akkermansia* and *Bifidobacteria*, and butyrate-producing bacteria. They strengthen the gut barrier integrity—the gut mucosal lining—which means that we have much better metabolic and hormonal signaling. In addition, they help reduce gut inflammation and remove

some of the barriers for GLP-1 release that come into play when the gut is inflamed.

Polyphenols are really great for helping with bile flow. Bile is one of my favorite things in the body, and it does not get enough credit. It does so many beautiful things. It is like our detox river, but it is a really big player in GLP-1 production. It activates the TGR5 receptors on the L cells, which triggers GLP-1. The release of polyphenols helps with the bile flow, keeping it flowing and keeping it from becoming stagnant.

Polyphenols also help mitochondrial function. The mitochondria are where you get your energy from, and if your mitochondria are stunted, nothing is going to work well.

Finally, polyphenols play a role in glucose control, blunting glucose spikes. This slows carbohydrate absorption, supports pancreatic beta cell function and then reduces those post-spike meals that weaken GLP-1 pathways. All of these are going to help with the production of GLP-1.

HG: Do we also get polyphenols from fermented foods?

CF: Yes, there are some in there as well, but berries, pomegranate and cranberry are the key players.

HG: Now let's talk a bit about circadian rhythm.

CF: There is nothing easier and more critical for health than getting morning sunlight. Allowing the first light that hits your eyes to be sunlight, and then eating within thirty to sixty minutes after, is a game-changer. This comes into play with the production of every hormone, and GLP-1 specifically, because everything in the body follows that circadian rhythm. GLP-1 is very reliant on the circadian rhythm clock of the gut, because the gut is what is producing it.

The gut clock is going to control motility, the movement of food through the body, the nutrients that signal the release of GLP-1, GLP-1 secretion, microbiome activity and all of that. GLP-1 is strongest in the morning to early afternoon. This is when we should be in the sun. When the sun hits our eyes, the body responds, "I am awake." GLP-1 starts to get produced, you eat your food and you are satiated

for a longer time. GLP-1 actually goes to sleep or stops working after sunset. By having those later meals, you are really doing a disservice to your body, because you're not going to digest as well at all.

We should be doing all of our eating in the daylight hours, but understandably, it is difficult when we want to eat with our family, and have to work or go to school. For the women I work with who are stuck in terms of weight loss, just eating within the sunlight hours turns the dial really quickly. Their gut heals faster, and their memory comes back. We are not nighttime creatures.

HG: I have heard that the prescribed GLP-1 is synthetic.

CF: It is. I think it is supposed to be 94 percent equivalent to natural GLP-1, but it is not a perfect match. Again, the thing that stands out the most is its extended half-life. Natural GLP-1 is broken down within minutes, whereas the injections stay for up to one hundred eighty-three hours.

In some people, GLP-1s affect their sleep as well. When you think about it, all hormones are supposed to work together. When we think about the metabolic hormones or circadian rhythm, we have insulin, GLP-1, cortisol, leptin (which makes us know we are full) and ghrelin (which lets us know that we are hungry). All of those should be working in conjunction. If you have just one that is stealing the show, what is going to happen to the others? How are they going to feed off of each other? These are the deeper questions that I think about. How is this going to interfere with how everything else is working?

HG: When eating, you said it is important to be calm and in parasympathetic mode. How does the nervous system relate to peptides?

CF: The nervous system relates to everything in our health. When we are in a stressed fight-or-flight state, we do not digest optimally. That leads to the big problem of the nutrients not reaching the L cells. In that situation, GLP-1 is not going to be produced. We will have gut

GLP-1 is very reliant on the circadian rhythm clock of the gut, because the gut is what is producing it.

issues from having massive chunks of food going down and not being digested optimally. That causes leaky gut, which causes inflammation, which interferes with GLP-1 production. We are not going to be pulling the nutrients that we need out of our food if they are not being broken down or we're not secreting enough stomach acid or digestive enzymes.

HG: So, even if you are eating a Wise Traditions diet, if you are in a stressed situation, your body will not be able to access the nutrients that you are taking in?

CF: That is the problem. Also, when we are stressed, we are constantly secreting cortisol. Ordinarily, that should again be another one where your body pumps it out because you need to run, and then you are done, and your body goes back to normal. When cortisol remains high, it suppresses everything. Bile flow is suppressed, and we already noted that bile is a major factor in the production of GLP-1. Cortisol also thickens the bile and slows down gallbladder motility. Nutrient-sensing does not happen. GLP-1 is not produced. In addition, when you are stressed, your vagus nerve is not doing what it is supposed to do. The vagus nerve normally boosts GLP-1 secretion. If your vagus nerve is not doing what it is supposed to do, less GLP-1 is being made naturally.

HG: What practical suggestions can you offer for people to lower their stress state so that they can take in the nutrients that will feed the natural peptides in their body?

CF: I tend to attract very high-stress, Type A clients who are overworking, so I do have some suggestions. It is critical to get yourself in a calm state for eating and throughout the day. If you can only do one thing, set up your morning time to be for you, even if it is just ten minutes. Wake up, and do not touch that phone. Get outside in the morning light, breathe, and connect. That is one of the best things you can do. Going for walks is also helpful. Before you eat, go for a short walk, even just two minutes, do some deep breathing and calm your body. Another easy thing is to put headphones on and listen to binaural beats [two tones with slightly different frequencies]. They work very quickly. If you need to jam it all in, listen to binaural beats while you go for a walk out in the sun. That is a good starting place.

HG: What about eating while standing versus sitting? Someone told me that if you stand, that is not rest-and-digest. Is that true?

CF: I don't know. Whenever I go to Europe, everyone stands and eats. Sometimes I feel better standing and eating because it elongates my entire torso, so everything can just move through. A better question may be, how are you breathing? Are you looking at your phone or the TV or listening to a stressful conversation while you are standing? When you eat, you should really try to just focus on eating. Easier said than done.

HG: Getting back to nutrition, what foods support GLP-1 production in the body naturally?

CF: The polyphenols, as already mentioned, are one of the biggest players. Protein also does the job, and it keeps you satiated, so you will not need to eat as much food. I feel like it is really important to have a high-protein breakfast because that is when GLP-1 is most effective. Lots of variety to keep your gut diverse. Real food in its whole form. Raw milk, grassfed proteins and plenty of healthy animal fats. No seed oils!

Another one is fiber. People are not eating enough, and it is very important. Bitter foods, for example—foods like arugula or the pith (white stuff) on the inside of oranges—but you want to make sure you have variety as well.

HG: What does fiber do? Why is it important?

CF: Fiber is important because it is one of the nutrients that is sensed by the L cells and will help with the GLP-1 release. It helps with constipation, so it is going to help move things through the body faster, which is good to help with the nutrient sensing. Fiber is beautiful for the gut microbiome. You have to feed the bacteria in there, and many of them, especially *Akkermansia*, live on fiber. If they do not have the fiber, you are not going to have enough of those keystone bacteria. Your gut mucosal lining is not going to be healthy. The L cells are not going to thrive. You are not going to produce enough GLP-1.

HG: Which high-fiber foods would you recommend?

CF: All your vegetables, of course, but we want to eat things more on the raw side, like crunchy. You could cook them a little. [*Editor's note: WAPF recommends that highly fibrous vegetables like kale and other rough leafy greens be thoroughly cooked.*] Asparagus, onions, garlic. If you choose to eat potatoes, you want to refrigerate them first and cool them down. It will change it to inulin, which is a better fiber. Eat them that way. Fruit, all of the green-tipped bananas, you can buy green banana starch. There are a lot of varieties to choose from.

HG: If someone told you that their doctor prescribed Ozempic or Wegovy, what would you advise them?

CF: First, I would advise them to use it as a tool. That is how we should use it. I understand “food noise”—I come from a history of eating disorders and have been there—so I know that it can be truly debilitating and makes change harder. If you are going to take a medication that shuts the “food noise” off, it can allow you to be more in control of what you are eating. Use it as a tool and start to do all of the things to help your body produce GLP-1 naturally, which means focusing on nutrient-dense food. You are not going to want to eat as much, so what goes into your body has to be very specific. All of the natural foods we just listed—processed stuff has to go.

Second, I would advise working on circadian rhythm. It is critical. It will change every hormone in your body. It will change your mood. It will change your life.

Third, start lifting. You have to build muscle. If you are going to lose weight, muscle is going to go, too. You have got to make sure you are rebuilding that muscle.

Finally, use it as a time to tune into yourself. We should not have to weigh or measure our food. We are very intuitive beings. If you are going to inject this substance to calm your brain and lessen your appetite, it is a good time to figure out what really works for you. Which foods make you feel amazing? Which foods do not? Which movements work for you? Which movements do not?

HG: I would be tempted to suggest that they do those other things for two weeks before starting. If you can dial in those basics, you might not need the medication.

CF: I do not think you would. As someone who had extreme “food noise,” we did not have this medication back then, and I got through it. It just takes work and being intentional. You do not have to take them. However, because the medications are being so heavily promoted—all anyone talks about is the GLP-1 shots—people don’t know that they can say no. I have had a lot

of calls where people ask if they have to take them. It is very sad to me that people feel the pressure and feel like they have to take these weight-loss shots when they do not.

HG: Do you think seeing “perfect” bodies on social media affects our perception of our own body’s shape and size?

CF: Yes. It is horrible. That is why I am very fearful now, looking at Hollywood as well. I feel like the “heroin chic” thing is back [an aesthetic that glamorized malnourished-looking bodies], and all these young girls are looking at it. Meanwhile, I’m thinking that this is not the way it is supposed to be. Some people are naturally thin, but there is a shrinking happening with women right now.

HG: I have noticed that. It is so alarming. They look sickly, like ghouls instead of people.

CF: The muscle is going. I love a strong, juicy woman. We’re supposed to be strong and juicy! I feel like we are going the opposite way. It is hard because many people look up to Hollywood stars and influencers, and we are shrinking again. It does not feel good to me at all.

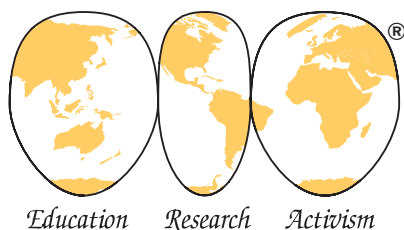
HG: You have shed a lot of light on how our bodies can naturally create GLP-1, and how dialing in the basics will help us. Is there something we’ve overlooked that we should touch on?

CF: To me, it is just important to reinforce the message, that you do not have to take the shots. You can accomplish everything just by giving your body what it needs. It can seem overwhelming, but it is not. Once you get there, not only will you produce sufficient GLP-1, but every system in your body is going to be optimized. And if you choose to take the shots, then do the work as well. It is the perfect time to fine-tune your body.

HG: If the audience could just do one thing to improve their health, what would you recommend that they do?

CF: Balance the circadian rhythm. The simplest thing is to get morning sunlight as your first light. It is free and always accessible, even if it is cloudy. The sun is coming through, and your body will sense it. ☀️

Podcast #564 (February 2, 2026)



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Elisha Celeste, Fascia
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Natasha Campbell-McBride, GAPS; Vegetarianism
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Michael Connett, Water Fluoridation
Laura Delano, Beyond Psychiatrization
Marc DiNola, A Dentist's Look at Dr. Price's Work
Ben Edwards, Measles
Mollie Engelhart, Former Vegetarian
Catherine Austin Fitts, The Power of Coming Clean
Shannon Goossen, Ancient Wisdom, Modern Frequencies
Vanessa Hargrove, Ferments and Sourdough Bread
Liz James, Blood Donations
Dan Kittredge, Nutrient Density
Chris Knobbe, Seed Oils
Joseph Ladapo, Health Freedom

Helene Leeds, Wise Traditions Cooking
Thomas Massie, Supporting Local Farms
Leigh Merinoff, Homestead Education for Children
Amy Mihaly, GAPS
Sally Fallon Morell, Nourishing Traditions; Contagion
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Kate Pope, Feeding Baby
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Reinette Senum, Streaks in the Sky
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Requests for refunds must be emailed by September 30, 2026. Depending on the date, a processing fee of either \$50 or \$150 will be charged. No refunds after Oct 10.

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Wise Traditions 2026

Washington, DC Schedule

THURSDAY, OCTOBER 15

~SCHEDULE IS SUBJECT TO CHANGE~

12:00-4:30 Chapter Leader Meeting with Lunch (For current chapter leaders--no charge)

FRIDAY, OCTOBER 16

7:30-8:45 Farm-to-Consumer Fundraiser Breakfast (extra fee) **8:00-5:30** Exhibit Hall Open
6:30-7:30 Movement with Paula James

9:00-10:15 Sally Fallon Morell: Nourishing Traditional Diets, Part 1
 Alexandra Muñoz: Safeguarding Fertility in the Age of Endocrine Disruption
 Dan Kittredge: Nutrient Density

10:15-11:00 *Break and Visit Exhibits*

11:00-12:15 Sally Fallon Morell: Nourishing Traditional Diets, Part 2
 Natasha Campbell-McBride: Regenerative Farming the GAPS Way
 Laura Delano: Beyond Psychiatrization: Building a Life After Medications and Diagnoses

12:15-1:45 *Lunch and Visit Exhibits*

1:45-3:00 Leigh Merinoff: Inspiring Curious and Capable Children Through Homestead Education
 Michael Connett: An Unreasonable Risk: The Federal Court Verdict Against Water Fluoridation
 Chris Knobbe: The Seed Oil Experiment: Can We Exonerate Carbohydrates? Rethinking the Drivers of Modern Chronic Disease

3:00-4:00 *Break and Visit Exhibits*

4:00-5:15 Vanessa Hargrove: Targeted Microbial Therapy: 8 Powerful Foods that Heal Your Gut from the Inside Out
 Marc DiNola: A Modern Dentist's Look at Dr. Price's Foundational Work
 Toby Rogers: How to Stop the Iatrogenocide

6:00-7:00 *Dinner*

7:30-9:00 Thomas Massie: TBD
7:30-9:30 Del Bigtree: Talk and Film: An Inconvenient Study

SATURDAY, OCTOBER 17

7:30-8:45 Farm to Consumer Fundraiser Breakfast (extra fee) **8:00-5:45** Exhibit Hall Open
6:30-7:30 Movement with Paula James **7:45-8:30** Sponsor Presentation

9:00-10:15 Mollie Engelhart: Debunked by Nature
 Natasha Campbell-McBride, Amy Mihaly and Andie Simons: GAPS All Disease Begins in the Gut, Part 1
 Josh and Adam Bigelsen: Holographic Blood: Exploring How We Evolve as Nature Does
 Neal Bosshardt: Medical Uses of Natural Bentonite Clay

10:15-11:00 *Break and Visit Exhibits*

11:00-12:15 Helene Leeds: Wise Traditions IS Right. So Why Are So Many of Us Still Struggling?
 Natasha Campbell-McBride, Amy Mihaly and Andie Simons: GAPS Part 2
 Elisha Celeste: Fascia: Mediator Between Material and Spiritual Worlds
 Alejandro Carrillo: From Degraded Land to Nutrient-Dense Food: Restoring the Water Cycle through Grazing

Wise Traditions 2026

Washington, DC Schedule

SATURDAY, OCTOBER 17 (continued)

12:15-1:45 *Lunch and Visit Exhibits*

1:45-3:00 Meaghan and Shane Carpenter: Keeping Fermentation Alive; Principles from Kitchen to Scale
Liz James: Battle for Our Blood: Informed Consent and Medical Freedom as it Pertains to Blood Transfusions and Blood Products
Kate Tietje: Building a Natural Remedies Cabinet for Beginners
Gregory Wrightstone: Warming and More CO₂ are Benefiting Humanity

3:00-4:00 *Break and Visit Exhibits*

4:00-5:15 Cheryl Ciecko: Is Your Home Making You Sick? How to Stop Mold Before It Stops You
Kate Pope: Feeding Baby: The First Three Years that Shape a Lifetime
Shannon Goossen: Ancient Wisdom, Modern Frequencies: Bridging the Gap in Holistic Care
Michael Clarage: Why the Electricity of the Stars Matters Here on Earth

5:15-5:45 *Break and Visit Exhibits*

6:30-9:30 **Awards Banquet Keynote:** Joseph Ladapo

SUNDAY, OCTOBER 18

7:30-8:45 Farm-to-Consumer Fundraiser Breakfast

8:00-1:30 Exhibit Hall Open

6:30-7:30 Movement with Paula James

7:30-8:15 Sponsor Presentation

8:45-10:00 Loredana Shapson: Skin Deep: How Your Gut Microbiome Affects Eczema, Acne, Psoriasis and More—and What You Can Do About It
Sally Fallon Morell: The Contagion Myth
Bernadette Pajer: Lobbied by Default: How Your Silence Shapes Pesticide Policy
Thaddeus Owen: EMF Triage for Real Life

10:00-10:45 *Break and Visit Exhibits*

10:45-12:00 Bill and Christina Schindler: Drinking Like a Human: Alcohol Through the Lens of Ancestral Fermentation
Allen Williams: From Soil to Human Health: Regenerative Agriculture Principles for Restoring Life, Resilience and Well-Being
Catherine Austin Fitts: The Power of Coming Clean
Ronald Whitmont: The Human Microbiome, Homeopathy and Chronic Inflammatory Illness

12:00-1:30 *Lunch and Visit Exhibits*

1:30-2:45 Vanessa Hargrove: Unlocking the Secrets of Sourdough
Ben Edwards: The Truth About the 2025 Mennonite Measles Outbreak
Reinette Senum: Streaks in the Sky: What We Thought We Knew, What We Discovered and Why it Changes Everything
Natasha Campbell-McBride: Don't Be a Vegetarian

3:00-4:00 **Closing Ceremony:** Joel Salatin: Food Emancipation: Unshackling America's Sustenance

MONDAY, OCTOBER 19

6:30 am-6:30 pm Will Winter and Steve Campbell: Professionally Guided Farm Visit

All Thumbs Book Reviews



Report of Michigan Fresh Unprocessed Whole Milk Workgroup
Skyhorse Publishing (2025)
Originally published by Spring House Press (2012)

Most of us raw milk drinkers have heard the gasps of disbelief, seen the looks of disapproval or perhaps even been subjected to the lectures about the dangers of consuming it. This is the book that I wish I had had in my pocket during those times! This report from 2012, which was prompted by the seizure of various raw milk products from a Michigan farmer's truck, was republished in 2025 with a foreword by Sally Fallon Morell and an afterword by Pete Kennedy.

The *Report of Michigan Fresh Unprocessed Whole Milk Workgroup* is chock full of evidence about raw milk as a food with unparalleled benefits that can support human health. After briefly summarizing the history of raw milk, including its regulation (did you know that Michigan was the first state to require pasteurization?) and the “why” behind it all, the report dives deep into the benefits and value of unpasteurized milk. From the conjugated linoleic acid (CLA) formed in the rumen of the cow or sheep, to the hairy casein micelle model proposed by researcher Cart Holt, to the enzymes that contribute to nutrient availability, we learn about all that this liquid gold has to offer.

The section on benefits (labeled Topic Two) concludes with a series of tables identifying the impact of heat, temperature and time on the various nutritional components of unpasteurized milk. (In this format, it's very easy to absorb this important information.) I learned, for example, that inactivation of *intrinsic* enzymes is extremely variable when the enzymes are exposed to the three variables just listed, whereas most bacteria in *extrinsic* enzymes are killed. Another one of the workgroup's interesting discoveries was that the three variables diminished prebiotics. Although the workgroup could not

determine whether heat had an effect on vitamin B₁₂ and trace minerals, we know that what the minerals are bound to *is* affected—and this is what changes intestinal absorption. If you want to know exactly why raw milk is most likely having a positive effect on your health, this section shares it all!

We have all heard about the so-called dangers of raw milk. I assume some of you have been shamed about drinking it like I have. Topic Three breaks this down by answering two questions: “What are the risks for fresh, unprocessed, whole milk, including all types of risks, such as pathogens, adverse consequences, intolerance, and allergens?” and “Where do these risks originate?” It is extremely helpful to have a clear summary, with charts, that provides detailed information regarding outbreaks, transmission scenarios for each pathogen, infectious doses, points of historical interest and categories of risk other than infectious disease.

Topic Four covers risk-benefit management. I appreciate how it identifies the issues or concerns that can be monitored by the consumer, and those that the farmer can monitor. This helps us understand how we can be proactive in our selection of raw milk. The short concluding section (Topic Five) elaborates on the topic of consumer choice and includes my favorite sentence in the entire report: “Educating the consumer about fresh, unprocessed, whole milk should really be the consumer's responsibility.” And that's what this report gives consumers—an opportunity to learn more about this health food, how it affects us and how to determine if it is of high quality.

This is not only an excellent book for consumers who want to become more knowledgeable about the differences between pasteurized and raw milk, but also is an excellent tool for the raw dairy farmer to have on hand to distribute to customers and non-believers! Thumbs up!

Review by Anya Adams

The report is chock full of evidence about raw milk as a food with unparalleled benefits that can support human health.

All Thumbs Book Reviews

Grain by Grain: A Quest to Revive Ancient Wheat, Rural Jobs and Healthy Food
By Bob Quinn and Liz Carlisle
Island Press

Bob Quinn, whose forays with organic wheat led him to start the heirloom grain company, Kamut International, spoke at the 2025 Wise Traditions conference. Attending his lively talk on kamut, I winced as he relived getting “busy with life and failing to realize the trap farmers were getting led into,” because my husband and I also once followed the Pied Piper spiraling down the trap. However, he also spoke of organic farmers’ joy and enthusiasm as they continually learn from their decisions. He says sharing (not hoarding) information helps everyone “float more boats.”

The invigorating tone of this kindly, cowboy-hat-wearing gentleman comes through in his 2019 book *Grain by Grain*. He opines that we are doing the same thing with the American population that his “chemical farming neighbors are doing to their soil: spending more and more money in a losing battle to treat symptoms when we ought to be focused on addressing the root cause of the problem.” Consider diabetes. In 1958, diabetics were 1 percent of the population; as of 2019, one in ten Americans had diabetes.

Quinn revisits the simple word “value,” discussing how brand strategists have traded away real value (that is, quality) and replaced it with “cheap.” Cheap stuff, cheap food. Even so, more Americans require food assistance. In 1972, ten million were reliant on food stamps; by 2019, the number was close to forty-five million.

Along the way, marketers also reshaped American producers into American consumers. That realization struck me hard when I realized that soybeans—the darling of farming in the 1980s and ‘90s—did just that to the Midwest farmer. No longer were we feeding our families, much less the world! And as farmers turned into consumers, their economic status diminished.

Quinn drives home the point that value literally has been subtracted and stripped away—no

bran, no germ, no soil health and no profit for farmers. The purveyors of value-subtracted products deliberately conceal the nature of their production and processing, but consumers also participate: “No one wants to know how the sausage is made.” The end result is a commodity mentality in which grower, buyer and seller are disconnected from on-the-ground realities.

Quinn was horrified to learn that peaches, picked hard and green, were gassed, creating tasteless and potentially harmful fruit. Even “progressive” farmers injected peaches with synthetic nitrogen, assuming plants don’t know the difference. We now know that this synthetic blast is no substitute for nitrogen provided by symbiotic organisms and is actually lethal to those vital microorganisms.

I wish I had read this book prior to the grasshoppers’ obliteration of our hay harvest in 2024. Quinn claims that if one surrounds the field with the biological agent *Nosema locustae*, the grasshoppers will eat their dead infected brethren and perish. He used wheat bran coated with it, spread by hand. A farmer might lose about fifty feet around the edge of the field, but not the whole field. We lost the whole field.

The Kamut trademark is Quinn’s guarantee that his wheat involves no hybridization, chemicals or adulteration. No value has been subtracted. The amount he brought to the conference did not equal the amount of interest in his product. I have been using it to make delicious sourdough bread with a crunchier texture than traditional wheat.

As of 2019, Quinn had not arrived at the same conclusions about Pasteur and germ theory as those espoused by WAPF. But who among us has not had to revise our understanding since 2019? In his talk, he also mentioned the Keeling Curve (a record of atmospheric CO₂ concentration referenced by “climate change” narratives). Overall, however, I learned from and enjoyed both talk and book, and his product tastes good. Both thumbs are up!

Review by Mary Walkes



Quinn revisits the simple word “value,” discussing how brand strategists have traded away real value (that is, quality) and replaced it with “cheap.”

All Thumbs Book Reviews



***Killed to Order:
China's Organ Harvesting Industry
and the True Nature of
America's Biggest Adversary***
By Jan Jekielek
Skyhorse Publishing

If you are looking for a book about some of the darkest, most evil practices in the world, this is the book for you. The subject is organ harvesting and transplantation—a great dinner-time topic. The main focus of the book is on how China has been forcefully cutting organs out of political prisoners who most certainly did not consent. While I don't doubt the validity of the evidence and the importance of the issue, it is not my purpose in this review to bang on China specifically. To be fair, the author clearly distinguishes between the Chinese Communist Party and the Chinese people, who he believes to be good and noble. In addition, China gets a lot of organ transplant customers from the U.S. and other countries, so there is a lot of guilt to spread around.

But Jekielek brings up a key point that applies broadly to the subject of organ transplantation, no matter where in the world you are—one that I don't think most people fully understand. The point is this: a donated organ is viable for a limited time after death. Even donated organs from people who are still alive don't come with a 100 percent guarantee.

So, one might suspect that creates a challenge in cases of something like a heart transplant. How to get around that challenge? Well, in the U.S. (and, I assume, other Western countries), they have come up with an artificial condition called "brain death." The body is still alive and has a pulse, but the brain is dead. It's OK to take organs in that case, right?

Here's the problem. Brain death is an idea that came directly from the business end of a bull. The definition of brain death has required repeated redefinition because some uncooperative people who were diagnosed as brain-dead

inconveniently recovered and are feeling much better now. If you want a citation for this, read the 2022 article in *Neurocritical Care* titled "The Uniform Determination of Death Act is Being Revised" (doi.org/10.1007/s12028-021-01439-2). The abstract is full of acronyms and nerd words but is pretty clear that the definition of death is rather controversial.

In July 2025, a guest essay appeared in the *New York Times*: "Organ Donors Are Too Rare. We Need a New Definition of Death." If that doesn't raise the hair on the back of your neck, you would be a good organ donor.

Whether you agree that brain death is a real thing or not, if it is at all questionable—and I think it is—then you can't morally justify taking an organ from someone under those circumstances. I think medical time and resources would be better spent finding ways to avoid the need for these extreme measures. I also think that if taking organs from brain-dead people is fair game, there is a lot of fair game in upper levels of government. (I know, this is no joking matter, but that was a joke. . . sort of.)

Dr. Joseph Varon, author of one of the book's forewords, writes something that is not a joke: "[T]he question raised by this book is not only whether medicine can be corrupted—but how easily. Not through overt cruelty, but through normalization. Not through sadism, but through compartmentalization. Not through hatred, but through obedience and career survival."

Full disclosure: I find the idea of organ transplant to be downright ghoulish. It is largely the result of an exaggerated fear of death brought on by a secular society that has lost its soul. Be that as it may, the thumb is UP for this book.

Review by Tim Boyd

"[T]he question raised by this book is not only whether medicine can be corrupted—but how easily."

All Thumbs Book Reviews

***The Resonance Effect:
How Frequency Specific
Microcurrent Is Changing Medicine***
By Carolyn McMakin
North Atlantic Books

Around one hundred years ago, the purveyors of pharmaceutical medicine decided they didn't want any competition from other forms of medicine that might be more effective, so they employed every dirty trick they could to debunk and destroy chiropractors, homeopaths, herbalists and others. While I did know of Royal Raymond Rife and his work, I did not know there were thousands of practitioners treating patients with specific resonant electrical frequencies. Carolyn McMakin has brought this treatment back from obscurity and tells us all about it.

One of the first things to understand is that this is not some kind of electroshock treatment using enough power to light up your teeth. Practitioners are using microcurrents too small to even feel. With the right frequency and waveforms, a variety of conditions from

nerve and tissue damage to organ malfunction can be treated.

Due to FDA regulations, you can't just go out and buy the frequency machine that will do the job, even though they are not dangerous to anybody but pharma-controlled medicine. This is more proof that the FDA continues the mission of protecting the prevailing medical gulag (which is very dangerous) from any competition that might really work.

Fortunately, it is easy to find practitioners using Frequency Specific Microcurrent (FSM) therapy on the Internet, one of whom (Shannon Goossen) will be speaking at our conference in October.

In her book, McMakin gives many examples of pain resolution using FSM, from headache to sore knees to dislocated shoulder. Results don't come quickly, however; often it requires several sessions lasting one hour or more to clear the pain. McMakin is clearly dedicated to helping her patients, especially when nothing else worked.

The thumb is UP for this book.

Review by Tim Boyd



With the
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BOOK REVIEWS IN *WiseTraditions*

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 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 peddle misinformation, and for these we will give a negative review. We also will give a negative review to any 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 printout of your ebook or manuscript in a notebook or coil binding.

Tim's Video Reviews



Steep Terrain (The Highwire Episode 464)

Del Bigtree

thehighwire.com/ark-videos/steep-terrain/

Del Bigtree ironically had a meeting of mind and body with a big tree on a ski slope somewhere recently. As a result, he opened the door on his show to the great virus debate—do they or don't they exist? I'm kidding about cause and effect. He has had others on the show, and this show was probably already planned before the tree came along and smacked him, but he really did meet a tree that put him briefly in the emergency room. Fortunately, he appears to be OK.

This episode features Alec Zeck, Ben Tapper, DC and Katie Collins, PA-C. A well-prepared Zeck does a very good job of shooting down the virus hoax. He shows slides of studies, what the studies show and what they do not show. He references *Can you Catch a Cold?* by Daniel Roytas, as well as the work by the Baileys in New Zealand, Christine Massey in Canada, and Stefan Lanka in Germany. He suggests good alternative explanations that should be studied.

Dr. Ben Tapper seems to agree with Zeck generally. Tapper gives us some relevant history of the word "virus," which used to just mean "poison." Tapper believes viruses exist as originally defined. This goes along well with the

point that we have mostly abandoned toxicology for fake viruses.

I give Del big credit for bringing them on the show and giving them airtime to make their case. The full episode is around three and a half hours, which some might consider painfully long, but not all of it is on the virus debate. (Between half an hour and one hour is other stuff I did not watch because I . . . just don't care.) Bigtree also mentions Tom Cowan and Andy Kaufman, who are big names in the real world where viruses don't exist. He even shows a picture of the book *The Contagion Myth* and explains why the name of the book changed because of Amazon's games. He says he wanted to have Tom Cowan on the show, but Tom doesn't like to travel (which I know to be true, especially by plane). Del makes an excellent point about science being the art of finding what you are looking for (whether it is true or not).

On the other hand, Del seems to see the question of the reality of viruses as purely academic and divisive, at least right now, and he sees his court cases against vaccine mandates and in favor of bodily autonomy as the winning strategy. Del's approach may be getting results in the short run, and I am grateful for his efforts. Neither I nor any of the panelists on the show have any desire to disrupt what Del is doing. I don't think this subject needs to be divisive.

Those battles
will keep
coming back
with different
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faces until we
get down to
the bedrock
of truth.



To Members of Parliament and Others: Forty-Five Years of Registration Statistics, Proving Vaccination To Be Both Useless and Dangerous

By Alfred Russel Wallace

E.W. Allen (1889)

Alfred Russel Wallace was a British naturalist, geographer and social critic. Reading this booklet helped to convince me of these things:

1. There will never be accurate statistics about numbers of vaccinated people.
2. There will never be accurate statistics about numbers of unvaccinated people.
3. Vaccination has never been shown to reduce mortality.

4. There are, and always have been, dangers directly related to vaccination.
5. The purported dangers unto the unvaccinated are unsubstantiated.
6. If you need convincing of all of the above, this booklet gives a historical analysis to support 1-5.

This is a thumbs up. [Note: Catalog records for this booklet are available at libraries ranging from the British Library and Wellcome Collection to Harvard. The booklet was digitized by the Internet Archive in 2015.]

Review by Mary Walkes

Tim's Video Reviews

Both approaches should be respected. Del goes into detail showing the success of his efforts so far and that is great. He also applauds Zeck's efforts and encourages him to continue.

I do not agree that the question of the reality of viruses is academic. While I am all for battles against unscientific mandates, I think those battles will keep coming back with different names and faces until we get down to the bedrock of truth. Getting people to understand that viruses are in the same category as cooties and Easter bunnies pulls the rug out from under all the vaccine scams and pandemic panics. As Sun Tzu said (and I paraphrase), until we understand what we are really up against, we lose. Nevertheless, the thumb is UP.

Raw Milk: The Lost Elixir of Life

Jonas Westh

youtube.com/watch?v=rjiK5kPrfr8

Ancient Egyptians, Mongols, Vikings and many others thrived on this incredibly dangerous white liquid that they consumed on a regular basis. I don't know what they called it, but in modern times, we call it milk. According to our most authoritative government agencies, like the CDC or FDA, drinking this stuff is like playing Russian roulette with your life. How did those people survive on milk without modern technologies like pasteurization and homogenization?

Maybe modern technology is the problem, not the solution. I have been drinking raw milk for over twenty years and have never had a problem. I get it from the Amish, who are not exactly known for having high tech.

This video sums up the effects of pasteurization technology on raw milk. Enzymes needed to digest the milk are destroyed. Vitamins A, B, C and E—destroyed or greatly reduced. Bioavailability of minerals like copper and iron—messed up. Same with probiotics. You may not be able to see the difference between

a glass of raw milk sitting next to a glass of processed milk, but at a molecular level, there is no similarity.

We also see video footage of real-food producers being raided, robbed and pillaged across the entire country, from California to New England. These outrages are being perpetrated by a large criminal syndicate known as government. While these goon tactics have become less common in recent years, it is good to remember what has happened and what can happen again if we don't keep pushing back. The thumb is pushing back and UP.

Medical Madness at Every Turn

The McCullough Report (Jan. 26, 2026)

podcasts.apple.com/us/podcast/medical-madness-at-every-turn/id1562849542?i=1000746751795

The first part of this audio presentation replays Senator Joshua Hawley attempting to extract an answer to a simple question from someone claiming to be a doctor. The question: "Can men get pregnant?" What we learn from this exchange is every possible way not to answer the question. If you can listen to this dialog without banging your head against the wall, you're a better person than I.

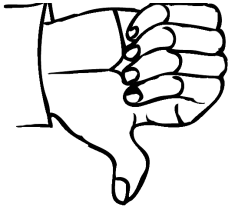
Dr. Peter McCullough responds to this freak show with a few scientific points that most of us learned by the time we were five years old (if not sooner). He goes on to expound on the insanity of transgender surgery, especially for children. I suppose it is quite an achievement for our culture to invent something even sicker than child sacrifice. Then there is the vaccine debacle. McCullough seems to at least partially understand what a racket that is and properly condemns it.

Up to this point, this doctor hasn't said anything I can strongly disagree with. If he stopped there, all would be well. But, like many, he doesn't know when to shut up. It makes me think



With regards to raids on raw milk, it is good to remember what has happened and what can happen again if we don't keep pushing back.

Tim's Video Reviews



McCullough is against critical nutrients that are necessary for cognitive function, like saturated fat.

there might be a good use for the face diapers that were popular a few years ago. Maybe they should be worn a little tighter.

After going off on an anonymous online doctor, he goes after Dr. David Brownstein, who committed the unpardonable sin of publishing books that do not conform to the common narratives about salt and cholesterol. Brownstein argues that salt is an essential nutrient and that statins are a toxin to be avoided. McCullough argues that statins have been proven to lower cholesterol, which they do. He thinks that is a good thing.

McCullough is also against other critical nutrients that are necessary for cognitive function, like saturated fat. Avoiding fat, salt and cholesterol seems to induce someone to believe that they are very smart, probably smarter than anyone else. At the same time, it impairs cognitive function. He points out that he keeps his fat intake down to ten grams per day or less. That explains a lot. It is hard to understand why anyone would want to listen to someone who avoids critical brain nutrients, so I'll leave it for others to figure out.

McCullough considers those "virus-deniers" to be up there with the worst of the mad wackadoodles. His response to them is that he doesn't need to prove anything to anybody. If your audience consists of nothing but brain-dead zombies, that is true. For anyone else, you might want to consider offering a little proof. He wants us all to be more scientific. OK, doc,

let's be scientific.

Science tells us we have bodies consisting of trillions of well-behaved cells. It also tells us there are bad actors lurking out there they call "viruses." They say these viruses are completely inert until they enter a cell and take control. OK, let's visualize this allegorically. All these well-behaved cells are like tiny little cars being driven in an orderly manner by mature, responsible adults. Then we have viruses, which are like drunk teenagers. (When I say "drunk," I mean plastered, smashed out of their gourds, passed out on the bathroom floor.) How do these dysfunctional, drunk delinquents (DDD) descend on decent little drivers? (Why is the letter worn off of the D key on my keyboard?) I imagine it looks a little like those ridiculous movies where brain-dead zombies who can barely drag one foot in front of the other somehow catch the good guys, no matter how fast they run, and eat their brains. The DDDs drop out of the fifth dimension, defeat the door locks, get in the car and take over, careening crazily off cliffs or ramming into each other like some big old demolition derby.

Welcome, ladies and germs, to science in the twenty-first century. At least, that is what it looks like in practice. And you wonder why I keep asking whether there is any intelligent life on this planet? Fortunately, there are a few surviving refuges of intelligence in the world, and WAPF is one of them. So, I probably don't have to tell my readers the thumb is DOWN. ☹️



HIGH MOWING SCHOOL, NEW HAMPSHIRE

High school students at High Mowing School, a Waldorf school in New Hampshire, have enjoyed learning about the Wise Traditions diet and discussing the *11 Dietary Principles* booklet with their teacher Joseph Modugno. Sally Fallon Morell spoke to the class in December 2025.

Lab Report

LEAD IN SALT

By Sally Fallon Morell

On learning of reports showing high levels of lead in unrefined salt, the Weston A. Price Foundation sent samples of salt for testing to Brooks Laboratory in Seattle, Washington.

The results are shown in Table 1. Indeed, three of the five samples tested high, at 150 - 460 parts per billion. Maldon sea salt flakes tested low as advertised; however, the coarse Celtic sea salt also tested low.

This raised the question of whether the lead found in unrefined salt was caused by grinding. In fact, this is a possibility with cheap zinc alloy grinders, which put lead in the ground powder.¹

So, we sent out more samples to the same laboratory to test this hypothesis—coarse and fine samples of three popular brands of unrefined salt (see Table 2). The results showed similar values for both coarse and fine ground salts; in fact, for each sample, the amount of lead was lower in the ground salt.

Some observations: ocean salt seems to accumulate more lead than other heavy metals, such as cadmium, arsenic and mercury. Both rounds of testing found levels of these metals lower by several orders of magnitude than the amounts for lead.

Secondly, it's hard to make the claim that the source of the lead is modern pollution. The highest level found was for Redmond's coarse salt—and Redmond's comes from ancient seas, buried under the ground for thousands of years. Natural sources of lead in the ocean include wind-borne dust, volcanic outgassing, runoff from streams and rivers, and from forest fires.²

Since lead has been a component of ocean salt (and, therefore, also of seafood) throughout man's history, it makes sense that we have some inbuilt mechanisms for protection, assuming that levels are not too high. The seafood-eating populations of the South Seas described by Dr. Weston Price did not show any sign of lead poisoning. (Those on the interior of the South Sea islands even drank seawater for salt.)

In fact, the body produces several lead-binding proteins that segregate lead into non-toxic forms, which we can then eliminate.³ For example, metallothionein (MT) is a family of cysteine-rich proteins made in the cells. Lead-binding proteins are formed in several organs (kidney, brain, lung and liver), and even appear in the red blood cells. Lead uptake is also blocked by certain strains of microorganisms in the gut.⁴ Assuming that the exposure to lead is not too high, these mechanisms would provide protection against the negative effects of lead.

Metallothionein is based on cysteine, a sulfur-containing amino acid that we get from meat, eggs and seafood; some of the other lead-binding proteins contain glycine, which we get from bone broth; and beneficial microorganisms can protect us when we have good gut flora by eating lacto-fermented foods and avoiding antibiotics. Likely vitamin A is also involved, as vitamin A is our number-one protection against toxins. In short, a nutrient-dense Wise Traditions diet is our best protection against lead in food, including in salt.

Moreover, both animal and human studies have shown that low calcium intake increases

Since lead has been a component of ocean salt (and, therefore, also of seafood) throughout man's history, it makes sense that we have some inbuilt mechanisms for protection, assuming that levels are not too high.

TABLE 1: First Analysis	Lead (Pb) (parts per billion)
Celtic Salt Coarse	4.8
Celtic Salt Fine Ground	335
Baja Gold Fine Ground	459
Redmond Fine Ground	153
Maldon Sea Salt Flakes	2.3

TABLE 2: Second Analysis	Lead (Pb) (parts per billion)
Celtic Salt Coarse	440
Celtic Salt Fine Ground	410
Baja Gold Coarse	300
Baja Gold Fine Ground	240
Redmond Coarse	450
Redmond Fine Ground	220

Both animal and human studies have shown that low calcium intake increases the risk of lead toxicity.

the risk of lead toxicity. In one rat study, researchers found that rats ingesting a low calcium diet had blood-lead concentrations four times higher than rats on a normal calcium diet, although the quantities of lead ingested were equal. So, raw dairy products, containing highly usable calcium, are another protective factor in the Wise Traditions diet.⁵

Of course, we don't want to overload these protective systems by ingesting too much lead. Processed foods that tend to be high in lead include commercial baby foods, fruit juices, dark chocolate and protein powders—foods that we don't recommend for many reasons.

But many natural foods also accumulate lead, including rice, leafy greens, root vegetables, spices and seafood. To minimize lead in vegetables and spices, buy organic, and always choose wild-caught—not farmed—seafood. To avoid lead in rice, use organic rice grown on the West Coast, such as Lundberg Family Farms.

Tests have found lead in bone broth at levels between seven and ten parts per billion⁶—less than the fifteen parts per billion which the U.S. Environmental Protection Agency (EPA) considers safe for water—and who is drinking chicken broth in the same amount as they are drinking water? Of course, for many reasons, we should be making broth with bones from pastured chickens or other animals using clean, filtered water.

Symptoms of lead poisoning in children include developmental delay, learning difficul-

ties, irritability, fatigue, digestive disorders, hearing loss and seizures. In adults, symptoms usually manifest as brain fog, joint and muscle pain, headache, mood disorders, fertility problems and miscarriage. High levels of lead can be determined by a blood test.

Should symptoms or blood test indicate lead overdose, the solution is to avoid foods high in lead, including seafood, and opt for a salt low in lead such as the Maldon—all the while embracing a diet rich in animal foods, raw dairy foods and lacto-fermented condiments and beverages. But for most of us, lead in unrefined salt—which humans have been consuming for centuries, often in amounts much higher than currently consumed—should not be a concern. 

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WAPF STAFF VISITS HEX SUPERETTE IN BALTIMORE

The WAPF staff had a fascinating visit and delicious lunch at Hex Superette in Baltimore, where Shaun and Meaghan Carpenter produce kombucha and many types of sauerkraut. Be sure to visit their booth and hear their talk at the Wise Traditions 2026 conference.

LEFT: Yolanda Hawthorne, Tim Boyd, Kathy Kramer, Sally Fallon Morell, Shaun Carpenter and Meaghan Carpenter.

RIGHT: Sally and Meaghan pose amid sauerkraut fermentation tanks. Each tank holds about two hundred fifty shredded cabbages!



Farm and Ranch

ROLLING BACK THE MEAT MONOPOLY

By Pete Kennedy, Esq.

One of the more important bills in the state Houses in this session is New Hampshire House Bill 396 (HB 396), legislation that would allow the sale of on-farm slaughtered meat by a producer from no more than three beef cows, five swine, ten sheep, ten goats, or a combination thereof per month. HB 396 passed out of the House on January 7; a hearing was held in the Senate Commerce Committee on February 10. The Senate passed an amended version of HB 396, then the House concurred and sent it on its way to Governor Kelly Ayotte's desk.

The latest version of the bill omitted the clause, "Any farm that slaughters and butchers its own beef cows, swine, sheep, or goats under this chapter with intent to sell the meat in intrastate commerce shall register with the Department of Agriculture, Markets and Food. A representative of the farm shall sign a statement in such registration acknowledging that by not processing its own beef cows, swine, sheep, or goats at a United States Department of Agriculture facility *the farm is violating federal law and could be subject to federal prosecution.*"¹

USDA MONITORING

The United States Department of Agriculture (USDA) is monitoring the progress of HB 396. The Federal Meat Inspection Act (FMIA) prohibits the sale of uninspected on-farm slaughtered and custom-slaughtered meat in either interstate or intrastate commerce. In this context, "inspected" means a state or federal inspector is present when slaughtering and processing is taking place.

In a December 18, 2025 letter to New Hampshire Department of Agriculture Commissioner Shawn Jasper, as well as the clerk of the state House of Representatives, a USDA official confirmed the bill was a direct violation of the FMIA and encouraged the state to work with USDA's Food Safety Inspection Service (FSIS) in expanding its slaughterhouse capacity.² If the

New Hampshire legislature decided to challenge the FMIA by passing the bill, few states would be in a better position to do so. If a bill like HB 396 passed in any state, FSIS would move to shut down the state meat inspection program, as well as any slaughterhouse with a grant of federal inspection. New Hampshire has no state meat inspection program and only four federally inspected slaughterhouses. Is it possible that state livestock farmers would have access to USDA plants in neighboring Massachusetts, Vermont and Maine if there was a federal shutdown.

LITIGATION POSSIBILITIES

The late state representative Sue Wallis, the original sponsor of the Wyoming Food Freedom Act, considered legislation that would have both allowed for the sale of on-farm slaughtered meat and specific funding for the Wyoming Attorney General's office to litigate with USDA over the matter. If New Hampshire HB 396 is signed into law, the state could allocate funding for litigation with the feds. Possible support in the way of an amicus brief could come from Wyoming, which has a law (Wy. Stat. 11-49-103)³ legalizing the sale of both on-farm slaughtered and custom meat, contingent on there either being an act of Congress or a federal court decision in Wyoming's district. Another possible amicus brief could come from South Dakota, which passed a law (House Bill 1064) earlier this year legalizing the sale of custom meat direct to the consumer under certain conditions contingent, again, on an act of Congress or a federal court decision in South Dakota's district.⁴

Even if the New Hampshire legislature does not provide funding for litigation, there can still be a lawsuit from a livestock farmer against USDA over the department shutting down implementation of the law as long as the legislature didn't subsequently amend or rescind HB 396. In 2016, the Maine legislature convened

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a special session to rescind a provision in its recently passed Maine Food Sovereignty Act that allowed the sale of on-farm slaughtered meat from producer direct to consumer in towns passing a food sovereignty ordinance. The rescission came after USDA threatened the state with the loss of its meat inspection program.

It's not as though HB 396 is authorizing any activity that hasn't been legal before. The original FMIA had a clause stating, "That the provisions of this act requiring inspection to be made by the Secretary of Agriculture shall not apply to animals slaughtered by any farmer on the farm and sold and transported *as interstate and foreign commerce*."⁵ At the time when the 1967 Wholesome Meat Act (WMA) passed, there were seven states without a meat inspection program⁶ where the sale of on-farm slaughtered meat was likely still legal; New Hampshire was one of them.

WMA DISASTER

To say the WMA has been a disaster would be an understatement. The act was promoted as a consumer protection bill but has turned out to be an industry consolidation measure. The WMA preempted state regulation over intrastate meat commerce and increased the cost of compliance for slaughter plants, without any corresponding benefit for the public health. Thousands of slaughterhouses went out of business in the years after the WMA passed.

As early as 1971, a Small Business Administration paper to the United States Senate Select Committee on Small Business reported on the disastrous effects of the WMA. The report was titled "The Effects of the Wholesome Meat Act of 1967 upon Small Business—A Study of One Industry's Economic Problems Resulting from Environmental-Consumer Legislation Prepared by the Small Business Administration."⁷ The paper discusses the cost of compliance with requirements of the WMA (mainly the cost of facility upgrades) and the effects it could have on small-scale slaughterhouses and processing plants. It includes the following observations:

- "It could be argued that the Wholesome Meat Act was as much of a disaster for many small meat firms as a hurricane" (SBA, p. 32).

- "During the congressional deliberations in 1967 over the Wholesome Meat Act, there was little discussion of the effects that the Wholesome Meat Act would have upon those fifteen thousand or so firms that would now be subject to rigorous inspection of their product" (SBA, p. 31).
- "Nor was much attention paid to the potential effects of the new law upon competition within the meat industry. The meat industries are among the most competitive in the American economy. But the Wholesome Meat Act would lead to a significant diminution of competition. How many firms would have to shut down because they could no longer compete due to the new law? Would the Wholesome Meat Act lead, however unwittingly, to an undesirable increase in concentration in the meat industry? Questions such as these were barely raised during the legislative process" (SBA, p. 31).
- "The SBA report notes that following passage of the Wholesome Meat Act, legislation was introduced in Congress that would have allowed SBA disaster loans for slaughterhouses attempting to become compliant with the act if the slaughterhouse's financial need could not be 'met by private financial institutions or by regular government credit programs.' As recorded in the report, 'the SBA disaster fund is based upon the legal principle that the emergency is created by the act of the sovereign U.S. government which is beyond the control of the individual business. This may cause major losses to the businessman, particularly if the company is forced out of business. The sovereign act is thus equivalent to a natural disaster'" (SBA, p. 33).

According to the report, the Wholesome Meat Act only directly affected strictly intrastate producers whose production at the most was 20-25 percent of the total national products of meat. Of this intrastate group, slightly less than half were not in conformance with the Wholesome Meat Act and probably about one-third or so of the group not in conformance would go out of business if some form of federal loan program

were not developed for their benefit (SBA, p. 86).

Much of what the paper questioned about the WMA has come to pass. In 1967 there were about nine thousand slaughterhouses in the U.S.;⁸ as of January 2025, according to USDA's National Agricultural Statistics Service (NASS), that number has dropped to less than three thousand.⁹ The twelve largest federal slaughter plants for cattle accounted for 51 percent of the total killed in 2024; the fifteen largest slaughter plants for hogs accounted for 64 percent of the total that year. For calves, four plants accounted for 70 percent of the total and four plants that slaughtered sheep or lambs comprised 37 percent of the total.¹⁰ Whereas the SBA report mentioned that strictly intrastate producers in 1967 were responsible for as much as 20-25 percent of national meat production, according to NASS in 2024, USDA plants slaughtered 98.2 percent of cattle, 97.1 percent of calves, 99.5 percent of hogs and 87.9 percent of sheep.¹¹ The WMA's passage, more than any other development, has led to the creation of oligopolies in the meat industry; today, four companies control around 85 percent of beef processing in the U.S., and four companies control nearly 70 percent of pork processing.¹²

CON JOB

The proponents' selling of the WMA when it was going through Congress amounted to a con job. A key to passing the act were federal surveys in 1962 and 1967 of state slaughter and processing facilities; in virtually every jurisdiction, investigators found unsanitary meat, unsanitary packing and processing conditions, and a myriad of other problems, with the upshot being conditions beneath the standard that would be required under the WMA. However, the newspaper, *The National Observer*, did its own investigation of the 1967 survey and reported the following:

- "Agents of the Federal Government fanned out across the nation last July under urgent and explicit instructions from Washington to gather examples of horrid conditions in meat-processing plants not under U.S. Government control.
- Swiftly and often with calculated decep-

tion, the Federal men got what they were ordered to get. Their findings, which were widely accepted as factual and unbiased Government inspection reports, painted a picture of widespread filth in meat handling. These reports were later to be used as undisputed authority for scare stories that frightened the public and helped stampede Congress into passage of a new and tougher Federal meat-inspection law—the Wholesale Meat Act of 1967.

- What can now be confirmed is the nasty fact that the 'evidence' gathered in July was deliberately biased, that the tainted reports were used to mislead Congress and the public, that they put a lie in the mouth of President Johnson, duped a large number of well-meaning people, including Ralph Nader and Betty Furness and did a superb con job on much of the nation's press.
- The stench of the filthy-meat survey began sweeping out belatedly early this year when state and industry officials challenged the authenticity of some of the inspectors' findings. An investigation by *The National Observer* revealed that U.S. inspectors had indeed, fudged on some facts, and that other reports were doctored in Washington to make them sound even more damning than they were."¹³

FOODBORNE ILLNESS

At the time when Congress was deliberating over the WMA, there were few foodborne illness outbreaks attributed to the consumption of meat processed in non-federal plants. The same can't be said about federal plants in recent years. According to the Centers for Disease Control (CDC), between 2005 and 2020, nearly six thousand cases of foodborne illness were attributed to beef and pork consumption.¹⁴ The likelihood is that all, or nearly all, of that meat was slaughtered in large USDA facilities which process three hundred to four hundred cattle per hour and more than double that amount for pork.

By contrast, in response to a Freedom of Information Act (FOIA) request filed by the Texas nonprofit, Farm and Ranch Freedom Alliance (FARFA), USDA acknowledged that

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between 2012 and 2020, there were no cases of illness attributed to the consumption of meat slaughtered and processed at a custom facility.¹⁵ Further, in response to a FOIA request, filed by the Weston A. Price Foundation (WAPF), USDA indicated that for 2010-2022 it could find no cases of foodborne illness that could be attributed to the consumption of meat from on-farm slaughtered animals¹⁶; according to USDA, about ninety to ninety-five million pounds of meat are slaughtered and processed on the farm in a typical year.¹⁷ The much lower rates of production at custom facilities and on the farm are much more conducive to quality control, inspector or no inspector.

If the problems of acute illness due to mass-produced meat are troublesome, the problems of chronic illness due to mass-produced meat are arguably worse, even though they might be more difficult to trace. In a recent sign-on letter to USDA Secretary Brooke Rollins and Food and Nutrition Service (FSN), leaders of heavily pro-meat consumption organizations—such as the American Grassfed Association, the Weston A. Price Foundation, Farm Action, and the Farm and Ranch Freedom Alliance—recommended that USDA not increase meat consumption requirements for school nutrition programs until it undertakes a comprehensive review of sourcing, production and processing standards. The big meat packers dominate the supplying of animal protein to the school meal programs. The letter observed that the “majority of all animal proteins served in schools are sourced from industrial supply chains that rely on routine antibiotic use, growth-promoting drugs including ractopamine, and feed grown with significant pesticide inputs.”¹⁸ Carcinogenic additives in the cheap food served in schools are another problem; the letter’s signatories recommend that USDA “strengthen guardrails around processing standards, routine pharmaceutical use, and additive profiles so that quality evolves alongside any future policy shifts. For example, USDA should focus on leveraging its own commodities procurement to encourage production systems that reduce routine pharmaceutical use, improve animal husbandry, and lower chemical input intensity, while expanding access to higher quality protein sources across diverse regional agricultural systems such as meat raised without hormones and routine antibiotics, grass-fed beef,

and organic meat and dairy.”¹⁹

The letter concludes by warning, “Otherwise, USDA may unintentionally reinforce consolidation, reliance on highly processed animal products, and divert resources from higher priority goals like fresh and local food sourcing.”²⁰

For the proponents of healthy meat to realize those goals, there needs to be a significant improvement in local slaughterhouse infrastructure. Health and Human Services Secretary Robert F. Kennedy Jr. has noted that chronic disease accounts for 90 percent of medical expenses in the U.S. Increased market access for healthy meat can reduce medical costs. Rolling back the WMA and allowing the sale of on-farm slaughtered and custom meat in intrastate commerce is a way to make that happen.

THE PRIME ACT

Meeting the growing demand for locally produced meat by expanding slaughterhouse infrastructure for custom meat is the aim of the Processing Revival and Intrastate Meat Exemption Act, federal legislation known as the PRIME Act, which has been under consideration in Congress since 2015, gaining more cosponsors with each session. The PRIME Act would give states the option of passing laws to allow the sale of custom-slaughtered/processed meat in intrastate commerce direct to the consumer and to venues such as restaurants, hotels and grocery stores. Currently, under federal law, meat from a custom facility can go only to the individual or individuals who own the animal at the time of slaughter; many potential customers either don’t have the funds to buy a whole animal or the space to freeze it.

Inclusion of a pilot program version of the PRIME Act in the current Farm Bill is a major step forward. Under the pilot program, the sale of meat to consumers from animals slaughtered and processed in up to ten custom facilities in each state opting to participate in the program would be legal. The pilot program would end on September 30, 2031;²¹ at that time, the question is whether Congress would codify sales of custom meat into permanent law in the next Farm Bill—there’s no guarantee that it would.

The PRIME Act’s lead sponsor, Thomas Massie, has been successful in this regard before; he was responsible for the inclusion in

the 2014 Farm Bill of a pilot program on hemp that led to sales of hemp products becoming permanent law in the next Farm Bill.

In the meantime, the national herd is at its lowest levels in over seventy years, and the price of beef is skyrocketing. Beef is arguably the most important food nutritionally for a majority of the country. Up to five hundred custom slaughterhouses would be able to operate under the PRIME Act pilot program if every state opts to participate in the program²²; is that enough to address the shortages of high-quality meat in the market?

ROLLING BACK WMA?

Over the next five years, only the courts can roll back the WMA's prohibition on sales of meat. When it comes to health, safety, food security, choice, fair markets and local resilience, the WMA is failing small-scale slaughterhouses, family farms, consumers and communities now more than ever. Federal preemption of intrastate meat sales needs to go.

Will New Hampshire be the state to commit to litigating over the WMA? The state has an argument that the Wholesome Meat Act has impaired its ability to protect the health and safety of its people under the Tenth Amendment police power with the contribution of centralized meat production to chronic disease and the mass shutdown of livestock farms due to the anticompetitive effects of the WMA. How would a lawsuit impact federal funding for New Hampshire if HB 396 passed into law and FSIS shut down the federally inspected plants in the state? Are there any affected farmers who would file a lawsuit? A lot is potentially at stake for farmers and ranchers across the country.

What's most at stake is the health of the American people. The people were sold a bill of goods nearly sixty years ago when the WMA passed into law. Legalizing intrastate sales of custom and on-farm slaughtered meat would be an integral part of Making America Healthy Again.

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ment action in various states as well as helped others to get started in the business of distributing raw dairy products. Pete compiled the state raw milk law summaries posted at www.realmilk.com and has since written articles for Wise Traditions on raw milk distribution.

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Vaccination Updates

PHARMA CROPS: WHAT HAPPENS WHEN FOOD BECOMES A VACCINE FACTORY?

By Kendall Nelson, Director, *The Greater Good*

Food has always occupied a clear and deeply understood role in human life. It nourishes, sustains and connects families to land and tradition. It also has long been used medicinally in the form of herbal remedies, healing broths, fermented foods and other traditional practices that support the body's natural resilience. Modern pharmaceutical medicine, by contrast, has historically belonged to a different category altogether—something manufactured, regulated, prescribed and administered. But over the last several decades, those lines have begun to blur.

Quietly, and largely outside of public awareness, biotechnology companies and researchers have been engaging in “molecular farming,” developing genetically engineered plants—nicknamed “pharma crops”—designed not simply to feed people but to produce medically active substances inside living crops. Tobacco, potatoes, tomatoes, corn, rice, lettuce and other plants have been used to manufacture vaccine antigens, antibodies, hormones and other biologically active compounds. Attracting particular enthusiasm, “edible vaccines”¹ are at the forefront of this technology.

PROMISED BENEFITS

Many edible vaccines are designed as “sub-

unit” vaccines.² In the case of plant-based edible vaccines, this means introducing selected genes into the plants so that the crops produce specific proteins intended to trigger an immune response.³

Supporters describe pharma crops and edible vaccines as “innovative” solutions to global challenges in vaccine manufacturing and distribution.¹ Plants, they argue, could serve as inexpensive biological factories producing vaccines on a massive scale. Other claimed advantages include easier administration and transport, reduced dependence on syringes and refrigeration, and broader access in countries or regions where conventional cold-chain systems and consistent medical access are problematic. Researchers are also exploring whether immune protection from edible vaccines might pass from vaccinated mothers to infants during pregnancy or through breastfeeding.

However, beneath the exuberant promises lies a troubling reality. Turning food crops into drug-delivery systems raises profound scientific, agricultural, regulatory and ethical concerns. For example, what happens when biologically active substances designed to alter immune function are grown outdoors in the same open agricultural systems that supply the global food chain? Once pharmaceutical production moves beyond the controlled environment of a laboratory, questions of contamination, cross-pollination, environmental spread, dosage control, informed consent and long-term safety become extremely pertinent yet difficult to answer.

SOME HISTORY

The effort to use plants as pharmaceutical production systems began gaining momentum in the late 1980s. In 1989, researchers led by Dr. Andrew Hiatt demonstrated that genetically engineered tobacco plants could produce functional antibodies, establishing the scenario that plants

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might serve as living manufacturing platforms for medically active compounds.^{4,5} Soon afterward, scientists engineered tobacco plants to express antigens associated with *Streptococcus mutans*, the bacterium linked to tooth decay.^{1,3,6}

By the late 1990s, interest in plant-made pharmaceuticals had expanded rapidly. Molecular biologists like Dr. Charles Arntzen, professor and founding director of the Biodesign Institute at Arizona State University, became leading advocates for the emerging edible vaccine field, attracting significant scientific, government and commercial interest. Some of the most widely publicized experiments involved potatoes engineered to produce hepatitis B antigens, followed by studies involving the Norwalk “virus,” cholera toxin and enterotoxigenic *E. coli* toxins.⁷ As enthusiasm grew, researchers even moved beyond laboratory and animal studies into small human trials in which volunteers consumed raw potatoes genetically engineered to express antigens associated with these pathogens.⁸

Additional studies in the early 2000s reinforced interest in the field. Researchers like Francesco Sala at the University of Milan published findings suggesting that proteins produced inside genetically engineered plants could stimulate mucosal immune responses following oral administration.⁹ Guided by germ theory and the idea that infectious pathogens enter the body through the mucosal surfaces lining the mouth, nose, lungs and digestive tract, scientists posited that vaccine antigens delivered through food would trigger immune protection directly at those entry points.

As scientists investigated plant-based vaccines targeting a wide range of human and animal diseases (including influenza, rabies, measles, malaria, cancer, anthrax, HIV and foot-and-mouth disease) and continued to explore plants as production systems for antibodies and other biologically active compounds, they found that translating the concept of edible vaccines into a reliable and controllable product was proving difficult. They discovered that vaccine proteins produced inside plants could degrade during digestion, and antigen expression often varied significantly from plant to plant, even within the same crop, raising concerns about inconsistent dosing.¹

Even so, interest in molecular farming accelerated dramatically during the Covid era, with governments, universities and biotech companies viewing plants as potential rapid-response production platforms for pandemic countermeasures and next-generation biologics. One of the most widely publicized examples was the Covid vaccine developed by Quebec-based biotech firm Medicago, a privately owned subsidiary of Mitsubishi Chemical Group until Mitsubishi shut it down in 2023,¹⁰ shortly after buying out all of the shares owned by secondary investor (and tobacco giant) Philip Morris.¹¹ Medicago had been working on a tobacco-based influenza vaccine since 2012.¹² Continuing with this branch of research, Medicago used tobacco relative *Nicotiana benthamiana* to produce a Covid vaccine candidate called Covifenz. In February 2022, Canada authorized Covifenz for human use,^{13,14} although that authorization was later withdrawn at the company’s request.

In addition to tobacco-based vaccines, researchers have continued to explore plant-based technologies involving lettuce and spinach. This work includes efforts to produce spike proteins and related compounds within plant systems.^{1,3} Scientists at the University of California, Riverside, for example, announced in 2021 that they were investigating whether edible plants could potentially be used to manufacture materials associated with mRNA vaccine technology.¹⁵

Over time, the technologies underlying pharma crops have become increasingly sophisticated.^{1,3} Some approaches rely on the theorized promise of “stable” genetic transformation, in which pharmaceutical genes become permanently integrated into a plant’s DNA and are passed on through seeds into future generations. Other systems use transient expression techniques that temporarily convert plant leaves into short-term protein-producing factories through modified plant “viruses” or *Agrobacterium*-based delivery methods. More specialized platforms include chloroplast engineering, hydroponic production systems and plant cell suspension cultures grown inside enclosed bioreactors designed to function more like controlled manufacturing facilities than conventional farms.

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IS THE GENIE OUT OF THE BOTTLE?

Notwithstanding the decades of experimentation and significant public-private investments, the promise of edible vaccines has not fully materialized. Back in 2018, Mitsubishi Chemical/Medicago was eagerly anticipating that its tobacco-based flu vaccine would earn over seven hundred million dollars in annual sales¹² by 2020; instead, the subsidiary is now closed. Most pharma crop technologies remain confined to laboratories, greenhouses or tightly controlled production environments.

At the same time, that scientists aspire to transform agriculture into a platform for pharmaceutical manufacturing is unmistakable. Moreover, several plant-derived biologic products and therapeutics have achieved regulatory approval, particularly in specialized medical and veterinary applications.

Worryingly, the public has little practical ability to know where pharma crops are being developed, what compounds they are being engineered to produce or whether experimental traits may have escaped into conventional agricultural systems.⁴ One need only consider the story of StarLink corn to understand the threat posed by contamination.¹⁶ In 2000, the genetically engineered corn variety—which had been approved only for animal feed because of unresolved allergy concerns—was discovered in taco shells and other human food products across the United States. The contamination triggered widespread recalls, export disruptions and public controversy after the corn had spread through grain handling and processing systems despite regulatory restrictions intended to keep it segregated. The incident clearly demonstrated the difficulty of preventing genetically engineered traits from entering the broader food supply in a commodity agriculture system.

Just two years later, in 2002, an even more direct warning emerged. Biotechnology company ProdiGene was found to have contaminated nearby soybean crops with genetically engineered corn grown to produce a protein intended for a pig vaccine.¹⁷ Federal regulators intervened and ordered the quarantine and destruction of approximately five hundred thousand bushels of soybeans, and ProdiGene later paid civil penalties and cleanup costs. Although the contamina-

tion was said to have been identified before the soybeans reached consumers, the incident again exposed the fragility of containment measures.

Unlike enclosed greenhouses, bioreactors or tightly controlled laboratory environments, crops grown outdoors in open agricultural fields introduce an entirely different level of unpredictability.¹⁸ Open fields are not sealed pharmaceutical manufacturing facilities. Seeds can spill during planting, harvesting or transportation. “Volunteer” plants may emerge unexpectedly in subsequent growing seasons from seeds left behind in the soil. Pollen can drift beyond field boundaries, carried by wind, insects, weather patterns or farm equipment. Meanwhile, grain from countless farms routinely moves through an immense commodity infrastructure in which crops are harvested, stored, transported and processed in shared systems. Once biologically active pharmaceutical compounds are introduced into open agricultural environments, maintaining strict containment becomes extraordinarily difficult.

The Union of Concerned Scientists examined these concerns in detail in a 2004 report,¹⁹ which concluded that the structure of modern American commodity agriculture was fundamentally incompatible with the degree of segregation pharmaceutical crops would require. After reviewing how major commodity crops such as corn and soybeans move through the agricultural system, the organization warned that the commodity crop infrastructure was engineered around bulk handling and large-scale commingling, not for the precise isolation standards required to prevent pharmaceutical contamination of the food and animal feed supply.

The report also identified numerous pathways through which contamination could occur. Cross-pollination represented one major concern, particularly with crops such as corn, whose pollen can travel significant distances even under normal field conditions. However, the researchers emphasized that contamination risks extended far beyond pollen drift alone. Shared combines, grain elevators, transport trucks, rail cars, storage bins and processing facilities all create opportunities for accidental mixing. Even trace amounts of residual

plant material left behind in equipment or storage systems could potentially introduce pharmaceutical-producing material into conventional food channels. Because crops from multiple farms routinely converge throughout every stage of the supply chain, the researchers concluded that maintaining extremely low contamination thresholds for pharmaceutical-producing food crops—or tracing and isolating contamination—would likely be impossible to guarantee under ordinary commercial farming conditions.¹⁹

BIOLOGICAL AND REGULATORY CONCERNS

Concerns extend beyond environmental escape alone. Vaccine antigens and other pharmaceutical proteins are specifically engineered to produce biological effects. In controlled pharmaceutical manufacturing environments, developers can (at least in theory) attempt to standardize dosage, monitor contaminants and maintain batch consistency. Food systems do not offer comparable safeguards. If pharmaceutical-producing crops were to contaminate food or feed supplies, serious questions would immediately arise regarding potency, cumulative exposure, vulnerable populations and the long-term effects of consuming biologically active compounds outside the conditions for which they were intended.^{3,6,18}

There are also unresolved scientific questions specific to plant-made pharmaceuticals themselves. Plant cells can attach sugar molecules called glycans that differ from those produced in the mammalian systems used in traditional vaccine production; these differences may influence protein folding, stability, allergenicity and immune response.^{1,3} Protein expression can also fluctuate with environmental conditions, making consistency difficult to guarantee outside of tightly controlled settings. Even when a product appears promising in a laboratory, that does not guarantee its stability, predictability or safety when scaled into agricultural production.

As the StarLink and ProdiGene examples illustrate, pharma crops also have economic implications. The entry of a pharmaceutical trait into the food supply has the potential to

trigger recalls, export losses, legal disputes and economic damage extending far beyond the original farm. Once trust in the integrity of the food system is compromised, the repercussions can ripple across entire agricultural sectors.¹⁹

At the same time, there is remarkably little transparency surrounding pharma crop development. Precisely how many pharma crop projects currently exist is difficult to determine. Some research is conducted openly through university partnerships and publicly funded grants, while other projects remain proprietary or occur within private biotechnology companies operating with limited public visibility. Field trial records provide only a partial picture. There is no routine national screening program specifically designed to monitor the food supply for accidental contamination from vaccine-producing crops or other plant-made biologics.

Oversight in the United States is divided among multiple federal agencies. The U.S. Department of Agriculture (USDA) oversees field trials and containment practices,²⁰ while the U.S. Food and Drug Administration (FDA) evaluates product safety and manufacturing standards.²¹ In some situations, the Environmental Protection Agency (EPA) may also become involved. On paper, this framework may appear comprehensive, but in practice, fragmented oversight can create regulatory blind spots—particularly when products exist at the intersection of agriculture, food and medicine.

Public alarm over transparency in the food supply has continued to grow, and some legislators are taking action. In their 2023-2024 legislative session, Tennessee lawmakers tightened labeling rules “relative to foods that contain certain substances,”²² reflecting rising concern that consumers are too often the last to know when major technological changes are introduced into the foods they eat. As enacted, HB 1894/SB 1903 stated that Tennessee “defines food that contains a vaccine or vaccine material as a drug for purposes of the Tennessee Food, Drug and Cosmetic Act.”²³

At the federal level, Representative Thomas Massie (R-KY) has been one of the more visible congressional voices advocating for stronger labeling protections²⁴ and greater transparency surrounding emerging food technologies.

There is remarkably little transparency surrounding pharma crop development.

History has repeatedly shown the risks of prematurely integrating unpredictable technologies into large-scale agricultural infrastructure.

LESSONS FROM MODERN AGRICULTURE

Americans have already witnessed how difficult it can be to contain agricultural technologies once they are released into open farming systems. Glyphosate, promoted as a targeted solution for weed control, has become so pervasive that toxic residues are now routinely detected in soil, water, rainfall, food crops and even the human body. Farmers growing non-GMO or organic crops have repeatedly struggled with chemical drift and cross-contamination from neighboring fields, often suffering economic losses despite never choosing to use the technology themselves.

Once genetically engineered pharmaceutical traits are released into complex living systems, the unintended consequences will become difficult to predict and hard to reverse. Gene flow, ecological disruption and contamination of conventional crops are not abstract possibilities; they are realities inherent to working with living biological systems that do not respect fences, field lines or regulatory categories.¹⁹

None of this necessarily means that every form of plant-based pharmaceutical research carries the same level of risk or is inherently bad. Some applications developed within tightly controlled systems might eventually prove useful for limited and highly specialized medical purposes. However, even advocates of pharmaceutical crop technology have long acknowledged a critical point: crops engineered to produce pharmaceutical compounds should have little or no role in the human food or animal feed supply.

Food is fundamentally different from other products, and certainly is unlike prescription medications taken intentionally under medical supervision. Nor is food a manufacturing platform or commercial delivery system. Food is one of the most intimate substances human beings encounter daily. It enters our homes and our own and our children's bodies. It influences human development beginning in the womb and affects health throughout the lifespan. Food is consumed continuously and by every segment of the population—including infants, pregnant women, the elderly and individuals with underlying health conditions.

Once the food supply is used to produce pharmaceutical substances, the distinction

between nourishment and medication becomes increasingly difficult to define—in ways that deserve far greater public discussion than they have yet received. Pharmaceutical compounds are specifically designed to exert biological activity. The long-term implications of chronic, low-level exposure—whether through accidental contamination, environmental persistence or unintended dietary consumption—are largely unknown. Important questions also remain regarding broader agricultural and ecological consequences—including potential effects on pollinators, soil ecosystems, wildlife and seed integrity—as well as consequences for export markets and public confidence in the food supply.

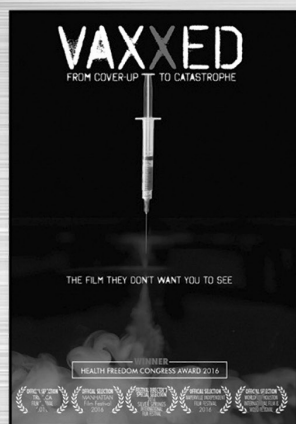
The central question, therefore, is whether society is prepared to normalize the transformation of food crops into pharmaceutical production systems before the long-term biological, ecological, agricultural and economic consequences are fully understood. History has repeatedly shown the risks of prematurely integrating unpredictable technologies into large-scale agricultural infrastructure. At its core, this debate raises broad questions about the future of food itself. Before society moves further down the path of turning agriculture into a platform for pharmaceutical production, the public deserves transparent debate, independent long-term safety research and a full accounting of the potential risks, not only to human health, but also to the integrity and resilience of the food supply upon which everyone depends. 

Kendall Nelson is the producer and host of the Wise Traditions podcast. She is an award-winning documentary filmmaker with more than three decades of experience in television, film and visual arts. As a longtime collaborator with the Weston A. Price Foundation and honorary board member, Kendall serves as its vaccine policy expert and is a regular columnist for the Wise Traditions journal. In 2011, she directed and co-produced The Greater Good, seen by more than twenty million people worldwide. Kendall also holds certifications in health coaching, yoga and Simplicity Parenting, which inform her integrative perspectives on health and family life.

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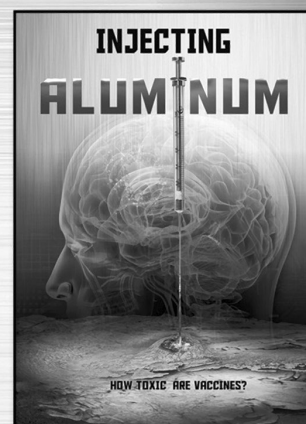
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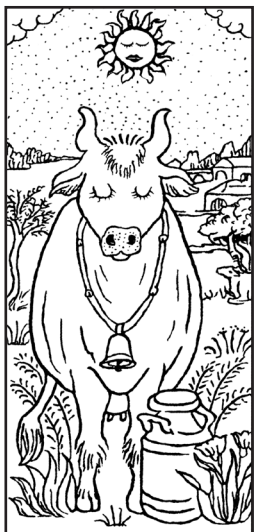
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A Campaign for Real Milk

RAW MILK STORIES IGNORE STUDIES ON UNPASTEURIZED BENEFITS

By Margaret E. (Peg) Coleman

This Guest Opinion by M.E. (Peg) Coleman was published in the Syracuse Post Standard (12 May 2026)¹ in response to an Associated Press article by Laura Ungar and Jonel Aleccia under different titles ('Got Raw Milk? Despite warnings, it's becoming more widely available' published 3 May in the Syracuse Post Standard; 'Push for raw milk intensifies across the US, despite illness outbreaks and scientists' warnings' elsewhere; apnews.com/article/raw-milk-legislation-outbreak-02c67adf7845d188c41a-b0af06e97869).

As a medical microbiologist, risk analyst, and grandmother, I am concerned that the article about raw milk in the *Syracuse Post Standard* by Laura Ungar and Jonel Aleccia (3 May 2026) failed to provide scientifically accurate information or context that my neighbors deserve to know when making dietary and health decisions. The outdated assumption that raw milk is inherently dangerous ignores major scientific advances of the past decade. Multitudes of diverse microbes in breastmilk and cow milk (the milk microbiota) promote gut health, balanced immune function, and protection from infectious and inflammatory disease.

The flood of misinformation about raw milk in the media prompted colleagues in Society for Risk Analysis (SRA) to work with me to challenge misinformation with evidence for public and technical audiences over a variety of venues this year. Are you wondering why millions of longtime raw milk consumers like me, my kids and grandkids, farmers and farm workers ignore warnings about imminent danger and choose raw milk over pasteurized?

Findings below from scientific studies are excluded from pro-pasteurization narratives dominating the media. The wisdom of SRA's commitment to "let the data speak" is sorely

needed in broader public discourse to bridge the chasm of mistrust in our society about food freedom and access to local raw milk.

Search the title below on American Council for Science and Health (ACSH) for a concise, readable, and referenced description that challenges outdated assumptions and misleading narratives consistent with the pro-pasteurization worldview: "Revealing Raw Truths about Milk: Scientific Advances in Understanding the Health Impacts of the Milk Microbiota."

The ACSH not only posted this rebuttal to misinformation from a previous post on their site, but then posted an apology for missing the mark on evidence-based communication.

Highlights from recent studies below reveal a divergent view of benefits and risks of pasteurizing raw donor breastmilk and raw cow's milk, based largely on a 2024 analysis of CDC data spanning sixteen years² (2005-2020) and previous collaborative studies, all challenging the pro-pasteurization narrative.

1. Raw milk outbreaks, illnesses, hospitalizations, and deaths are not increasing (contributing less than 1 percent of the burden of infectious disease in the US over sixteen years: 0.4 percent outbreaks, 0.1 percent illnesses, 0.5 percent hospitalizations).
2. Annual rates of raw milk illness per serving for available data from [California] were low and not increasing (less than one illness per million servings for fourteen of sixteen years, and less than five illnesses per million servings for 2015 and 2023).
3. Pasteurizing milk did not prevent 4,313 acute illnesses, 343 hospitalizations, and 26 deaths for dairy-borne infectious disease over sixteen years.
4. Pasteurized—not raw—milk contributed to an estimated fifteen million chronic ill-

nesses (intolerance or allergy), with fifteen fatalities reported in the National Food Death Allergy Registry for 2005-2025. Eleven of the fifteen milk allergy deaths disproportionately affected children aged three to seventeen.

5. Children with milk allergy all tolerated the maximum volume of raw milk (50 mL) but suffered allergy symptoms at an average of 8.6 mL pasteurized milk in a small provocation study.³
6. Pasteurized dairy was associated with significantly higher outbreaks, hospitalizations, and deaths compared to raw dairy, as well as twenty cases of stillbirth, miscarriage, or premature delivery, none reported in raw milk.⁴
7. Raw milk feeding of infants, compared to heated milks, provided the highest level of protection against respiratory and ear infections in a large prospective cohort study (983 infants), comparable to breastfeeding. Diarrhea was not associated with raw milk feeding to infants⁵ (see ACSH post Epidemiologic Associations for Protection of Infants: 2015 Clinical Study), comparable to breastfeeding.
8. Pasteurizing human donor breastmilk unequivocally causes a loss of benefits to Neonatal Intensive Care Unit (NICU) infants. Denial of evidence on benefits from dozens of human studies for breastmilk and bovine milk reveals bias. Follow the money.

What else do my New York neighbors and those in other states need to know? Most states have excellent records of raw milk safety based on CDC data. New York reported only four illnesses (no hospitalizations, no deaths) associated with raw milk in the past ten years, while the number of licenses for dairy farms selling raw milk direct-to-consumers increased. CDC data on milkborne deaths (four for pasteurized and one confirmed for raw milk) over sixteen years are too sparse for reliable prediction of future milkborne mortality. Many articles cite opinions claiming that increasing access will increase outbreaks or deaths.⁶ The CDC data refute those opinions.

I work to protect the rights of my grandkids

and their grandkids to choose fresh unprocessed local milk, complete with the natural protective milk microbiota. Advances in understandings of the protective effects of the milk microbiota call for more balanced, evidence-based dialogue about actual studies, not just opinions or positions of individuals and organizations that promote their own agendas.

The pasteurized milk agenda threatens farm families and robs consumers of our freedom to choose our 21st-century diets.

Margaret E. (Peg) Coleman
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EPILOGUE

Due to the newspaper's space limitations, I did not list the venues where our work will be presented this year: 1) the International Milk Genomics Consortium conference in September; 2) at a panel peer-review workshop in October; and 3) at the Society for Risk Analysis conference in December.

Interested in supporting our work? Stop by our table at Wise Traditions Oct 16-18 to contribute to the 2026 crowdfunding campaign and get more information on our work (wisetraditions.org). 

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Pasteurizing human donor breastmilk unequivocally causes a loss of benefits to Neonatal Intensive Care Unit (NICU) infants.

NORTH DAKOTA - LOSS OF FOOD FREEDOM ADVOCATE

North Dakota lost a champion of food freedom when LeAnn Harner died this past winter. She was sixty-six. Harner was instrumental in helping the state pass some of the most favorable food freedom laws in the U.S. She played a key part in the passage of a 2013 bill, legalizing herdshare agreements; until that time, any sale or distribution of raw milk for human consumption was illegal. She was the driving force behind the 2017 North Dakota Food Freedom Act, successful legislation that gave North Dakota one of the best cottage food laws in the country. She later worked with the Institute for Justice to stop an attempt by the state health department to narrow the scope of that law.

In 2023 she worked in support of legislation that legalized raw milk sales. She also helped in a 2025 effort that expanded sales to include all raw dairy products. A skilled organizer and educator, she taught classes in cheesemaking, among other topics, and operated a goat herdshare dairy at her farm in Oliver County. She spent many days at the state capital in Bismarck effectively working for legislation that has benefited thousands of North Dakotans. She will be greatly missed.

OKLAHOMA - SENATE BILL 2028 NOW LAW

On May 7, Oklahoma expanded its law on the sale of raw milk and raw milk products when Governor Kevin Stitt signed Senate Bill 2028 (SB 2028) into law. Prior law limited the sale of raw milk to an average of one hundred gallons per month; SB 2028 increases that to fifteen hundred.

The bill also allows the sale of any raw milk product; all sales of raw milk and raw milk products must be direct to consumer and take place on the farm where the raw milk is produced. The raw milk container must have a warning label which, among other things, must notify the consumer that the raw milk or raw milk product is not licensed, regulated or inspected and that the raw milk or raw milk product “may contain harmful bacteria that can cause serious illness.” The Oklahoma Department of Agriculture, Food and Forestry is charged with issuing regulations on the requirements for the content on the warning label.

SB 2028 continues a couple of trends regarding raw dairy bills that have passed in recent years. The bills have all contained little or no regulation for sales of raw milk and raw milk products. For the most part, public health officials still do not believe raw milk can be produced safely but, with the overwhelming demand for the product, instead of successfully opposing bills like they have in the past, they would rather not have the legislation give them the responsibility of regulating raw dairy. The second trend is that states are increasing the number of raw dairy products other than milk that are legal to sell. The dairy processors lobby once strongly opposed legalized sales of raw milk products other than cheese but, like the public health agencies, have reduced their opposition to raw dairy sales.

SB 2028 went into effect on passage. After Utah Senate Bill 179 (see Wise Traditions 2026 spring issue for background), SB 2028 became the second raw milk bill to pass into law in 2026.



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CALIFORNIA - FDA PILES ON RAW FARM

Lifting the interstate raw milk ban remains a bad idea. The record of the United States Food and Drug Administration (FDA) harassing businesses producing raw cheese (aged 60 days or more) is well documented in Catherine Donnelly's book, *The War on Artisan Cheese*. It's the one raw dairy product that the agency does have jurisdiction over. FDA provided further evidence of why the interstate prohibition on raw milk for direct human consumption is actually a blessing in disguise, with its recent treatment of Fresno-based Raw Farm, the largest raw dairy in the world.

On March 15, FDA issued a press release stating that it and the Centers for Disease Control (CDC) were investigating a multi-state foodborne illness outbreak attributed to the consumption of Raw Farm cheddar (eventually the Feds claimed the cheese sickened eleven people) from September 1, 2025, to February 13, 2026. FDA's problem in making this claim is that Raw Farm is the only dairy in the world that operates an on-farm pathogen testing lab. Mark McAfee, president of Raw Farm, said that from September 2025 to March 2026, fourteen thousand tests were conducted at the lab—all tests of raw milk were negative for pathogens. A handful of negative pathogen tests aren't necessarily dispositive about whether a food made someone sick, but what about fourteen thousand?

For its part, FDA stated that it collected and analyzed nineteen samples of raw cheese, with one sample testing positive for *E. coli* 0157:H7; a problem for the agency was that the strain of *E. coli* 0157:H7 found in the sample was not the same strain as the one blamed for the illnesses. McAfee said the positive sample wasn't tested for release; Raw Farm has a test-and-hold policy where no product is marketed until it first tests negative for pathogens.

Instead of absolving Raw Farm of blame, FDA doubled down and claimed the strain it found was linked to a 2025 outbreak sickening three people. The problem for the agency this time was that none of the sick people reported consuming raw cheese. McAfee also said that whole genome sequencing, the current "gold standard" for pathogen testing by public health agencies, is "a horrible tool for making conclusionary statements about the cause of an outbreak."

With the pressure FDA was putting on the dairy, McAfee issued a voluntary recall of the company's raw cheese on April 17. On April 30, CDC announced its investigation was over but its final press release did not specifically exonerate Raw Farm for the 2026 outbreak while at the same time indicating it had no evidence linking the dairy to the illnesses—again, three of the eleven people allegedly sickened by the outbreak reported that they did not consume raw cheese.

McAfee was confident about the reason for FDA harassment; commenting on a blog post by David Gumpert, McAfee wrote, "The FDA has told us on several occasions over the last eighteen months (and again in person ten days ago) that 'Raw Farm is the last retail raw cheese regulated by the FDA that does not pasteurize the cheese and label it as raw!'" They demand that we do the same!! We have told them NO. We believe that this request amounts to consumer fraud and is very misleading and *constitutes* misbranding. We refuse!"

Under the current federal regulations, manufacturers can heat cheese at 150 degrees and label their product as "raw." The goal of career bureaucrats at FDA to get all truly raw cheese off the market hasn't changed. 

SOURCE: McAfee, Mark. (2026, April 17). Comment on "Here's the Likely Reason Raw Farm Is Getting So Many People Sick." (Blog). DavidGumpert.com, April 14, 2026. <https://www.davidgumpert.com/heres-the-likely-reason-raw-farm-is-getting-so-many-people-sick>



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Healthy Baby Gallery



Fourteen months old, Sebastian was freebirthed in a trailer on Kodiak Island, Alaska, in February 2025. He weighed 7 pounds 6 ounces and was remarkably alert and strong, holding his head up from the moment he was born. His parents followed the Wise Traditions diet to the best of their ability before and during pregnancy. Sebastian's favorite foods are eggs, raw cheese, kefir, cod liver oil and fresh-milled sourdough bread with butter. He is also still nursing. His chubby little cheeks make even the grouchiest of people smile. His parents constantly receive comments about how handsome, happy and healthy he is. He is very smart, which can make him a bit of a troublemaker. He also loves to dance, climb and run around saying "Hi" to people.

Evelyn is fifteen months old, and despite having her start through a c-section, she is in robust health. She has eaten a wealth of Weston A. Price foods, starting in the womb! She regularly consumes cod liver oil, meat stock, sauerkraut, liver pat , sardines, slow-cooked meats, butter and raw milk, along with stewed fruits, avocado and root veggies. She has a remarkably joyful and sweet temperament, paired with a bright mind and a capable body. She is a delight, and a testament to the value of ancestral and healing foods.



Tripp is ten months old, born weighing 8 pounds 9 ounces. His first-time mom picked up *Nourishing Traditions* when she found out she was pregnant. She immediately implemented a Weston A. Price diet throughout the pregnancy and had an easy pregnancy. Tripp has been in the ninetieth percentile for height his entire life and continues to grow! His first foods were bone marrow, egg yolks, sardines, chicken liver and sweet potato custard. He loves to read books, study objects with wheels and laugh. He already knows five words and is ready to take his first steps! His parents attribute his intellect to cod liver oil, healthy fats, breastmilk and a vaccine-free infancy. They can't wait to continue to nourish his gut and brain and watch him blossom into a toddler. Thank you to WAPF for guiding them on how to achieve a perfectly healthy baby!

Eliza Juliet, seen here eating a piece of raw liver, was born on November 1, 2025 to Nick and Rita Bohman, granddaughter of former chapter leaders Dan and Nancy Kremer in Yorkshire, Ohio. Her parents both do the WAPF lifestyle and believe in local, unprocessed clean foods as a means to fulfilling the potential that nature wants to offer us. Their goal for Eliza: "have life and have it to the full."



Healthy Baby Gallery

Stefan Gabriel, born in July 2025, is a vibrant and robust baby. He had a bumpy start, due to mom's sensitization against his blood type. This resulted in a short NICU stay and two blood transfusions. While these conditions were not optimal, Stefan has prospered on a diet of breastmilk and healthy traditional foods like cod liver oil, cream and meat. He is in the ninetieth percentile for both weight and height and is active and happy. His parents know that their traditional diet helped him overcome his early difficulties, though ultimately, he is a testimony to the goodness of God. His story may encourage any other parents facing less-than-ideal odds—children are a blessing whether they have the “perfect” start or not—and a little good food goes a long way!



Sabrina was born at thirty-nine weeks after a swift and easy delivery in May 2025. She was 8 pounds 8 ounces and had a head circumference in the ninety-ninth percentile—making her substantially more robust than her two sisters. Her forty-two-year-old mother credits a WAPF diet for a healthy pregnancy and delivery. Mom enjoyed raw milk from local grass-fed cows, local regenerative meat, organic eggs, kombucha, whole-milk yogurt, sourdough bread and a daily dose of cod liver oil throughout the gestational period. Sabrina was exclusively breastfed for six months; after that, mom introduced her to solid foods from *The Nourishing Traditions Book of Baby & Child Care*. Sabrina's favorite food is puréed liver with butter and homemade bone broth. People regularly comment on how alert, happy and mild-mannered she is. Mom is grateful for the wisdom gained from WAPF and only wishes she had known these principles during her previous pregnancies. Mom even brought the *Nourishing Traditions Book of Baby & Child Care* into the labor and delivery room, which inspired her longtime midwife to order her own copy.

The parents of Frances (now three) and Esther (now one) were blessed with their adoption in October 2025. Both were commercial formula-raised, Standard American Diet (SAD) fed and vaccinated on the current hospital schedule. All that stopped once they came into their new home.

Over the last six months, Frances has been enjoying homemade bone broth, grass-fed beef, liver paté, homemade sourdough bread, lots of butter, pastured-raised eggs from backyard chickens, homemade yogurt with cod liver oil and raw milk. Esther began with the WAPF raw cow's milk formula, which she took to like a fish to water! She's now exploring solids and loves liver! Esther started walking and talking at eleven months and is pleasantly plump like the Gerber Baby. Both girls sleep soundly through the night and are vibrant, healthy, energetic, happy and a delight to be around! They've had minor colds but got over them very quickly. Everyone says they light up the room, and they really do. Their parents couldn't be more thankful to God and for the wisdom that WAPF makes available to everyone. Thank you for this blessed knowledge!



Teen Gallery: If you want to share a photo of your teen whose good health you attribute to the WAPF principles, send to info@westonaprice.org.

Healthy Grandparents Gallery: Do you have healthy grandparents in their 80s, 90s and even 100s brought up on a traditional diet? Please share their photos with us! Send to info@westonaprice.org.

Local Chapters

Local chapters help you find locally-grown organic and biodynamic vegetables, fruits and grains; and raw milk products, butter, eggs, chicken and meat from pasture-fed animals. They also represent the Weston A. Price Foundation at local fairs and conferences and may host cooking classes, potluck dinners and other activities to help you learn to integrate properly prepared whole foods into your life. Local chapters may be able to put you in touch with health practitioners who share our philosophy and goals. IMPORTANT WARNING: This chapter list is meant for individuals to contact a local chapter for food sources and for small farms or food producers to contact chapters near them. It is not for use by vendors and marketers. If you use the chapter email addresses to promote a product, even a free product or giveaway, we will not allow your company to advertise in *Wise Traditions* journal nor exhibit at our conference.

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DENVER, COLORADO

The Denver chapter had a wonderful afternoon and learned so much from beekeeper Tom Smedley, owner of Sumac Hill Farm. Little Ruby Rose got stung on the chin by a bee. Luckily, Ren and Andie promptly administered homeopathic *Apis*. Ruby Rose got immediate relief, and a big smile returned to her face!

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The chapter visited Serenity Farm in Sedgwick to learn about their regenerative produce and raw milk farm. Owners and chapter members Tiffany and Brad hosted the tour.



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BERKSHIRE COUNTY, MASSACHUSETTS

Chapter leaders Carol Avery and Natanya Bittman hosted a dozen people to review the Winter 2025 *Wise Traditions* journal. The group also shared WAPF-inspired food, and resources for healthy food and care providers in their area.

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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 healthcare 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 healthcare practitioners who support the Foundation's teachings regarding diet and health.
2. Represent the Foundation at local conferences and fairs.
3. Organize social gatherings, such as support groups and pot luck dinners, to present the Weston A. Price Foundation philosophy and materials.
4. Present seminars, workshops and/or cooking classes featuring speakers from the Weston A. Price Foundation, or local speakers who support the Foundation's goals and philosophy.
5. Represent the Weston A. Price Foundation philosophy and goals to local media, governments and lawmakers.
6. Lobby for the elimination of laws that restrict access to locally produced and processed food (such as pasteurization laws) or that limit health freedoms in any way.
7. Publish a simple newsletter containing information and announcements for local chapter members.
8. Work with schools to provide curriculum materials and training for classes in physical education, human development and home economics.
9. Help the Foundation find outlets for the sale of its quarterly magazine.

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A REUNION

Sally Fallon Morell meets up with Ralph and Sheila Schlatter at the Seeking Whole Health conference in Wooster, Ohio, April 16-18. Sally met the Schlatters at a hearing for cow shares in Ohio many years ago. Since then the Schlatters have been providing raw milk to cow share owners from their pasture-based Canal Junction Farm in Defiance, Ohio. Ralph and Sheila are great supporters of all things WAPF!



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Kingston: Susan Clinton (613) 888-1389 suek0h2t0@gmail.com & Bob Clinton, DDS, bobbk0h2t0@gmail.com
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Oakville: Rachael Thiessen (416) 605-4377, thiessen.rachael@gmail.com

QC

Laurentides: Maude Colin (514) 862-5641, info@maudecolin.com

SK

Saskatoon: Carrie Braun (306) 491-2523, carrie-braun@protonmail.com

COSTA RICA

San Jose: Gina Baker +(506)2289 8806, regeneratewithgina@gmail.com (506) 84941407 Whatsapp

FRANCE

Provence Cote d'Azur: Beatrice Levinson +33617756307 BeatriceLevinson@gmail.com Beatrice-levinson-gaps.com,
facebook.com/BeatriceLevinsonNaturopath/

GREECE

Athens: Antonis Sarantakis +30(69)45792910, sarantak@icloud.com & Anna Papakosta

IRELAND

Tipperary: Anne Maher +1 353877927311 maher.anne1@gmail.com

MEXICO

Mexico City: Galia Kleiman +52 5543608713, babylovesfood@yahoo.com

NETHERLANDS

Limburg: Tanja Stevens +31616474192 tanjastevens@hotmail.com limburg.westonprice.nl/
westonprice.nl/waar-vind-ik-goed-eten/

CHAPTER RESOURCES

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

The Weston A. Price Foundation currently has 442 local chapters. 395 serve the District of Columbia and every state in the U.S. except Delaware. 47 chapters serve 16 countries outside of the U.S.

LOCAL CHAPTER CHAT GROUP

Our chapter leaders have a wonderful secure platform to carry on our many beneficial discussions, developed by Jay Hamilton-Roth, the husband of one of our chapter leaders. We encourage all chapter leaders and co-leaders to join if interested in learning and growing as leaders and individuals. To join, contact Maureen Diaz: outreach@westonaprice.org.

International Chapters

NEW ZEALAND

Hawkes Bay: Phyllis Tichinin +(64 27) 4651906, phyllis@truehealth.co.nz

NZ Resource List: Deb Gully deb@frot.co.nz wapfwellington.org.nz

South Canterbury: Carol Keelty +03 6866 277 bckeelty@outlook.com

Tauranga: Catherine Garney +64275701184, catherine@nutritionforhealthnz.com

Tutukaka/Whangarei: Lynn Slovak +64212747599, tutukaka.wapf@protonmail.com

POLAND

Brodnica: Adam Smiarowski +1 01148606209914, szkolarycerska@gmail.com

SOUTH AFRICA

South Africa: Eastern Cape: Lowell Vickers +27 76 387 4872, lhv777@gmail.com

SPAIN

Madrid: Ana de Azcarate 34 616 821039, aquilina68@yahoo.com

SWITZERLAND

Bern: Judith Mudrak-Wasem rohmilchjudith@gmail.com

Neuchatel: Ann-Sophie Clerc 41 79 128 22 17, asclerc.gaps@gmail.com

UNITED KINGDOM

Scotland: Central Belt: Urara Donohoe 07812 606 272, uhiroeh@gmx.com

Scotland: East: Michael Butler +44 (0)7903858801, mikebutler@unitlifesciences.com

Surrey and Hampshire: Diana Boskma +44 1252 510 935 dboskma@gmail.com

facebook.com/groups/336421596766813/

West Wales: Naomi Lange wapf.westwales@protonmail.com +44 (0)7957 240889

BECOME A WESTON A. PRICE CHAPTER LEADER

HELP YOUR COMMUNITY FIND REAL FOODS

- Assist people by sharing your list of local sources
- Support local farms and small food producers
- Strengthen the health and unity of your community

1

Apply

WAPF members can apply using the simple application here or calling for details:

westonaprice.org/start-a-chapter

2

Make your food resource list to share

Create a list of local sources for nutrient-dense foods and share it when requested.

Optional activities

Educate

Share WAPF materials about our dietary principles in stores, libraries, fairs, etc.

Build Community

Host meetings such as cooking demos, talks, potlucks and farm tours

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CO

Rafter W Ranch, Simla, CO. A family-owned ranch, practicing regenerative agriculture, bringing you nutrient-dense food. Our animals are **100% certified American Grass-fed**. Our beef is 30-day dry-aged. We also offer pasture-raised lamb and broiler chickens. Bones, offal (liver, tongue, oxtail, kidney, cheek, heart) and other choice cuts available. Bulk and piece orders. We are part of the Harvest Host. Pick-up locations along the Front Range and **NOW shipping** in CO. (719) 541-1002, rafterwranch.net.

IL

ORGANIC, HEIRLOOM, GRAINS, FLOURS, BAKED GOODS AND MEATS. Small family farm using heirloom varieties and growing methods then processing grains in a traditional manner. We accomplish this by doing everything on our farm in Dwight, Illinois. www.qualityorganic.net (815) 584-1850.

IN

DEVON BEEF, 100% grass fed, no antibiotics, no growth hormones. Full cow, 1/2 cow or individual cuts from my ranch in St. Leon, Indiana. Pastured pork, 100% antibiotic free, fed minimum amount of organic corn, 100% outdoors on pasture and woods. All meat USDA inspected. Information on how we raise our beef and pork plus important health links at abundantgreenpastures.com or Mike at (513) 646-8739.

KS

Prime Grass Farm: NE Kansas. Grass Fed + Grass Finished Beef + Hormone Free for life. Taking orders for 2026, processing included, whole beef \$6.00/lb/hanging weight. Halves + Quarters available. Also, organic red winter wheat is available. Eli (785) 206-0350 or Steve (785) 294-0823.

KY

GRASS FED ANGUS BEEF. Helping you dish up Nature's finest to your favorite people. Nourish your way back to health with our frozen beef boxes or bulk bundles. Deliveries to Elizabethtown, Louisville, Lexington, Danville, Berea, Somerset and Campbellsville. (606) 235-1473 www.FireflyFieldsKY.com.

River Bend Farm Cerulean, Kentucky. 100% Grass fed herd shares for raw milk. Family based operation. Raymond Hoover 10488 Cerulean Road, Cerulean, KY 42215.

MA

Pasture Lane Farm Market, our community of family farms produces raw dairy products, pastured meats, fresh fruits and veggies,

baked goods and preserves. Open year around. Visit our farm store at: 2 Pasture Lane, Livermore Falls, Maine (207) 897-2516.

MD

Nick's Organic Farm, since 1979 offering quality products to Washington, DC, suburban MD, No. VA, Baltimore and Frederick areas. 100% grass-fed beef (no grain ever), pastured chicken, turkey, eggs. Using a regenerative 12 year crop rotation, we constantly move our livestock to fresh pastures to build our soils. Our animals receive only organic feed raised on our farm, no hormones, no antibiotics, no animal by-products, no GMOs. Beef and poultry liver, organ meats, fat, and bones, chicken/turkey feet, beef sausage and jerky. Hay, straw, poultry feeds, food grade grains, popcorn, stone ground heirloom cornmeal (301) 983-2167; nicksorganicfarm.com; nicksorganicfarm@comcast.net. **JOIN our mailing list** to receive **order forms** and an invitation to our annual **Buckeystown Farm Tour**.

100% soy-free chicken, eggs, pork and beef. Chicken livers, chicken feet and heads. Bacon and sausage. Raw pet milk. Raw milk blue and cheddar cheese by cheesemaker Sally Fallon Morell. **Will ship** whole cheese wheels. Southern Maryland, within 1 hour of downtown Annapolis and Washington, DC. Saturday farm tours. Store open Thursday and Friday 10-6, Saturday 10-4 and by appointment. P. A. Bowen Farmstead, 15701 Doctor Bowen Road, Brandywine, MD. (301) 579-2727, pabowenfarmstead.com.

MN

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

Raw Milk Stand. Self serve in your container. Open daily, Monday to Saturday, year round. Also eggs, vegetables, fruits, honey and queen bees in season. Stephen and Mary Lambright, 35503 570th Ave, New York Mills, MN 56567.

MO

Nourishing Pastures offers 100% grass-fed, grass-finished beef and lamb, 100% grass-fed A2A2 raw milk, and truly pastured eggs, chicken, turkey, and pork. Real, honest, nutrient-dense food raised on pasture for families who care about quality. Trent Shrock (660) 619-8347.

NC

Little Way Farm in central North Carolina offers food as it should be: wholesome, simple, and without all the junk you're trying to avoid. We believe that buying natural food should bring you peace of mind, nourish your body, and offer long term health for all of nature, including you! Our natural farming practices honor the cycles of nature. We offer local farm-pick up and home delivery in North Carolina as well as shipping to all lower 48 states. Shop 100% grass-fed and grass-finished beef and lamb, and non-GMO, pasture-raised poultry, pork, and eggs. Plus, you'll find raw honey, 100% organic and sprouted flour, rendered lard, and lard dish soap in our online store. We also offer ways to save through our subscribe & save model, or our multi-pack bulk options. Order online at littlawayfarmnc.com.

NY

Dutch Meadows brings you the finest in high-quality grass-fed meats and organic dairy products, raised in harmony with the land. Order online and choose from hundreds of farm products, **WE SHIP**. Convenient pick-up locations in NYC. (717) 442-9208 info@dutchmeadowsfarm.com – DutchMeadowsFarm.com.

Grass fed Farm Fresh food to help you achieve vibrant health by enjoying high quality, nutritious, 100% grass fed raw dairy from sheep and Jersey cows. 100% grass fed/finished beef and lamb, Soy Free pasture raised pork, turkey and chicken, and lots more. Order online and utilize our convenient home delivery or pick up locations. Shop farmmatch.com/pleasantpastures or call (717) 768-3437.

100% Grass-fed beef, pastured non-GMO pork and eggs, pure NY maple syrup, goat's milk soap. Visit our farm stand. Also 100% whole grain sourdough bread (pre-order only) (315) 651-6862. Walnut Hills Farm 440 Pleasant Valley Road Lyons, NY 14489.

OH

COPIA FARM, Dan & Caitlin, Short drive from Columbus, Johnstown Ohio. Farm store open daily, 9 am-7 pm. Raw milk herdshares, grass-fed meats, pasture-raised eggs, organic produce, organic sourdough bread & more! Regenerative, GMO-free, organic, paleo. (614) 915-9269, CopiaOhio.com.

OR

Grass-based biodynamic raw milk dairy offering Jersey Hi-creamline milk, cream, golden butter, cottage cheese and aged cheeses. Soy-free veal and pork seasonally. On farm

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sales and membership club. **Can ship.** Sherry and Walt (541) 267-0699.

PA

Raw A2/A2 butter – salted or unsalted – grassfed. \$16 per lb. Raw, unsalted, never-frozen butter. Packed in glass, 4 lb jar, \$17 per lb. 1 pint ghee \$18. **Shipping available** across the states. Creamline Acres 109 Stovers Cross Rd, Mill Hill, PA 17751. Voicemail (570) 660-6250. Email creamlineacres@ibifax.com.

Dutch Meadows brings you the finest in high-quality grass-fed meats and organic dairy products, raised in harmony with the land. Order online and choose from hundreds of farm products, **WE SHIP**. Visit our farm store. 694 Country Lane Paradise, PA. (717) 442-9208 info@dutchmeadowsfarm.com – DutchMeadowsFarm.com.

GAP VIEW FARM MARKET Raw milk, raw milk cheese, cream butter, eggs, including duck eggs and fresh vegetables from our chemical free farm. Call (484) 667-1382 or visit our farm market in the heart of Lancaster County, PA at 5230 Newport Rd, Gap, PA 17527.

Pastured chicken, pork and eggs. Non-GMO, soy-free feed, chemical-free pastures. Hearty Roots Farm, Cumberland County, PA (717) 687-6137.

100% Grass-fed A2 raw milk, raw butter, cheese, cottage cheese, yogurt and more; 100% grass-fed beef; mobile-pastured corn-and soy-free eggs and chicken; chemical-free produce; wholesome delicious baked goods and more. Visit our farm store or contact us to host a dropsite for your community. Lititz Flavorite, 619 W. Lincoln Ave., Lititz, PA 17543 (717) 543-8953; lititzflavorite.com.

Noble Pastures brings you premium 100% grass-fed A2A2 raw milk and cream, pastured eggs, sourdough bread, raw cheeses, and sourdough kvas. Enjoy fast, convenient shipping **to your doorstep** and get a **free bottle of kvas** with code **GETMYKVAS**. Offer ends 5/31/26. Order at NoblePastures.com or call 223-221-0040.

Raw, unheated HONEY from grass-based PA farm, **free shipping**. Bees not moved for pollination. Seasonal varieties. 5 lb jug \$49, 10 lbs \$92. Order at www.owensfarm.com, send check, or stop by. Owens Farm, 2611 Mile Post Rd. Sunbury PA 17801 info@owensfarm.com 570-898-6060. Continental US only.

Quackin' Egg Hollow, New Holland, PA produces pastured, chemical-free duck eggs and

quail eggs, corn and soy free. Now offering Einkorn cereal, gluten free ancient grains, sprouted flour and oats, plus our own baking mixes. **We ship.** Call or text (717) 656-0423. Michelesmixins.com.

Stone Meadow Farms offers raw milk cheese from our grass-fed dairy. 100% grass-fed beef and pastured pork. Everything is raised outdoors and rotated on pasture with no antibiotics, hormones, GMOs or soy. **We ship cheese.** Woodward, PA (814) 349-5182.

Indulge in rich, creamy butter and ghee from Triangle Organics, with beyond organic farm practices and 100% grassfed Jersey cows. Nationwide shipping available. Call Elmer at (814) 349-4890, grassfedgoodnessclub@gmail.com, to order your organic dairy products today and taste the difference.

TN

Martin Family Farm, nestled in the rolling foothills of the Smokies, offers a wide variety of fresh in-season food. From our pastured meat chickens, grassfed beef, organic, soy-free pork and grassfed lamb, to our several acres of intensively managed, permanent-bed gardens, and our 100% grassfed raw milk, 10-cow Jersey dairy, we find great fulfillment in providing nourishing foods produced in a healthy, diverse, vibrant and flourishing ecosystem. Come see us at: Martin Family Farm, 959 Country Road 423, Athens, TN 37303.

Raw A2A2 Goat Milk: Experience the delicious health benefits! We supplement our pastured dairy goats, laying hens and meat chickens with organic grains. Purebred LaMancha breeding stock available. Come visit: Littlefield Farm 1841 County Road 423, Athens, Tennessee 37303.

VA

Grass fed Farm Fresh food to help you achieve vibrant health by enjoying high quality, nutritious, 100% grass fed raw dairy from sheep and Jersey cows. 100% grass fed/finished beef and lamb, Soy Free pasture raised pork, turkey and chicken, and lots more. Order online and utilize our convenient home delivery or pick up locations. Shop farmmatch.com/pleasantpastures or call (717) 768-3437.

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

Know your farmer, heal the soil. Garrett & Isabelle Heydt of **Solstice Beef** rotationally

graze cattle to regenerate land, raising **100% GRASS-FED** bulk beef & bundles. Pickups: NoVa or on-farm near Charlottesville/Richmond. **FREE NATIONWIDE SHIPPING** on beef sticks! --- solsticebeef.com.

VT

Vermont organic, 100% grassfed, Jersey A2A2 DAIRY and creamery business for sale. Large raw milk market, plus yogurt, butter. Farm store. Retiring owners wish to see the work continue. Employee first, then purchase C/E, lease facilities. Text (802) 884-5288. Larsonfarmvt.com

WI

Try our handcrafted 100% lard soaps, tallow balms, herbal infusions, tallow sugar scrubs and lip balms. We render our own lard and tallow. Soy-free Gloucestershire Old Spot pastured pork available as halves or wholes. Pricing starts at \$5. Shop <https://korteacres.square.site>.

APPRENTICE/EMPLOYMENT

Seeking remote job! Career path in food systems, tribal health, chronic disease prevention and philanthropy. Background in project management, administrative operations, client services and event logistics. Also open to part-time or project-based opportunities. Please reach out: angelaboone@gmail.com or <https://www.linkedin.com/in/booneangela/>.

CRAFTS & CLOTHING

Beautiful crafts by local artists. Keep your gift-giving dollars in the USA. Alpaca blankets, socks and yarn; hand painted decorations, paintings by award-winning artist David Zippi; handmade quilts. Exclusive source of Nourishing Traditions posters. Saturday farm tours. Store open Thurs-Sat 10-6 or by appointment. P. A. Bowen Farmstead, 15701 Doctor Bowen Road, Brandywine, MD. (301) 579-2727, pabowenfarmstead.com.

DVDS/ON-LINE VIDEOS/BOOKS

The Power of One-Third (1/3 sleep, 1/3 daily activities, 1/3 me), a 52-week prescription for a **Balanced Life**. Embark on a journey to trust your body-mind-spirit, make lasting life changes and meet a NEW YOU. Curious? Contact mariola@powerofonethird.com.

REAL IMMUNITY FILM SERIES — Health Doesn't Come at the End of a Needle

The acclaimed Real Immunity documentary

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series is an essential watch for all parents. It inspires trust in the body's innate wisdom, dispels fears around childhood illnesses, and explores Homeoprophylaxis, a 200-year-old method of supporting immunity through homeopathy. The films feature leading physicians, researchers, and health advocates like Del Bigtree, Paul Thomas, Joe Dispenza, Andrew Wakefield, Tom Cowan and many more. Stream online at RealVitality.org.

FARMING VENTURE/LEASE/SALE

Have you ever dreamt of owning a farm school and teaching cooking, butchering, farming, ceramics and blacksmithing? Now you can. High in the mountains of southern Vermont we are selling a stunning working farm in our farming community. Text (917) 363-1946.

SEEKING INVESTORS!! SAVE FARM FROM BEING SOLD! 46 acres on river in Coeur d'Alene, Idaho. Have two sisters to buy out. Need someone to invest in it as a health retreat. Could be a remarkable destination health lodge/organic farm! Approved for 10 room BnB. Brenda Pendergast (208) 682-3003, brenda.suependergast@gmail.com.

RESEARCH/OUTREACH

Do you have a child with a chronic health or developmental condition? Documenting Hope invites you to join **Healing Together**, a private online community where parents and caregivers can connect, support one another, find resources, and embark on a healing journey together. <https://healing.documentinghope.com/register/>.

SERVICES/SUPPLIES

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Panella sugar for the extra nutrient content. The only reimbursement is the cost of shipping/handling (they will be coming from Texas). The scobies will be freshly vacuumed pack from the "hotel" the day of shipping with freshly brewed tea. Text to order and if you need a successful recipe: Toni Russell, RN, (469) 337-3799.

HELP NEEDED TO SAVE a small regenerative family farm. Farmer and chapter leader (with first baby) in rural farmland of SW Virginia are being harassed and sued by nearby wealthy vacationing landowner. We have milk herdshare, meatshare, and LGDs. The lawsuit, begun in 2023, has been nonsuited and refiled in an attempt to remove our insurance attorney support. FTCLDF is unable to assist. Need legal help, pro bono attorney, or can pay limited \$ for support while pro se. Email hello@grasstotable.com.

Intended parent in need of a surrogate gestational carrier. Please contact Justin Allen at justin.allen4email@gmail.com.

TRAVEL/LODGING

Alpine Hiking and Culinary Seven-Night Summer Retreat in Switzerland: Bettmeralp, the Lötschental Valley in the footsteps of Dr. Price, and Kandersteg, with chef-author Tania Teschke July 4-11, 2026. We will be hiking and cooking together in the spirit of the WAPF. Join us, and revitalize your senses! Contact Tania at info@bordeauxkitchennaturals.com More info at: <https://bordeauxkitchen.com/hike-switzerland-2026/>.

Book your stay at Mulberry Lavender Farm and B&B in Tennessee to experience a simpler life and watch heritage animals thrive. Visit the farm store or stay in the Historic Farmhouse or Cottage, with all-organic farm breakfast. Book online at mulberrylavender.com.

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by Calvin Coolidge

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- O.P. corn meal
- fresh ground small grain flour Einkorn & spelt
- maple syrup & raw honey
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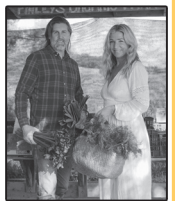
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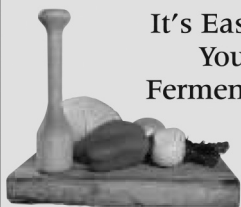
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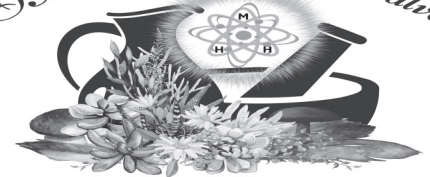
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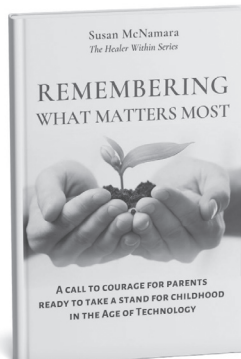
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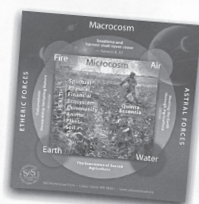
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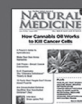
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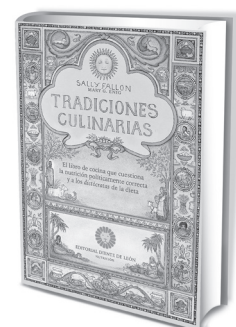
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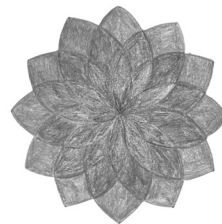
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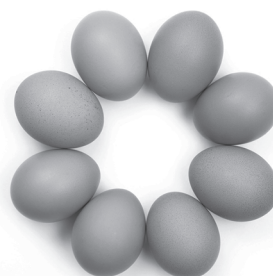
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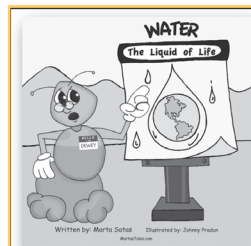
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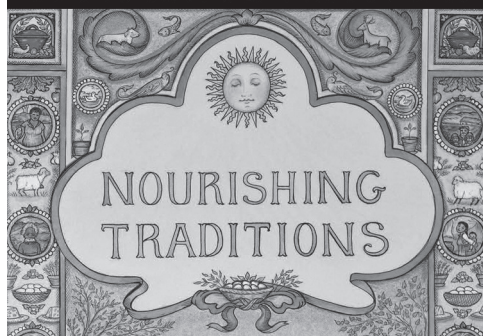
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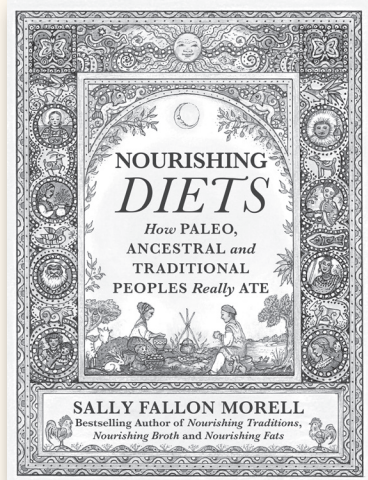


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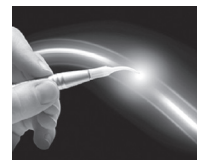
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Calendar

2026

- August 3-4** **San Marcos, TX:** 2026 Southern Family Farmers and Food Systems Conference. Texas State University in San Marcos. <https://www.southernfamilyfarmersconference.org/>
- August 15** **Swoope, VA:** Rogue Food Conference at Polyface. Joel Salatin, John Moody, Dr. Eric Berg, Hunter Smith, Max Kane and more. <https://roguefoodconference.com/polyface-2026/>
- August 21-22** **Swoope, VA:** Stockman Grass Farmer Gathering. <https://stockmangrassfarmer.com/store/product/the-gathering-at-polyface-2026>
- September 12** **Virginia Beach, VA:** Health Choice: Liberation from Mandates Summit hosted by the Virginia Medical Freedom Alliance with Paul Marik, Jeffrey Tucker, Maureen Diaz and others. <https://vamfa.org/health-choice-summit/>
- October 15** **Washington, DC:** Everyday Homeopathy for Families, Farms and Animals. <https://homeopathycenter.org/event-every-day-homeopathy-families-farms-animals/>

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Last words of Dr. Weston A. Price, January 23, 1948



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