MWSHS Student Newsletter

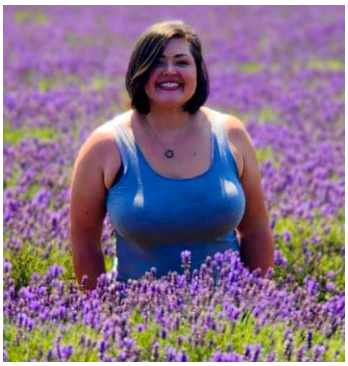
Autumn 2026

MWSHS Alumna Profile

Nikki Stoddard

Nikki Stoddard graduated from the Western-Herbalism module in the autumn of 2025.

Asked as to what prompted her to become a student with MWSHS, she explained: "For the last decade, I've been on a natural health crusade. It started with being discouraged by dismissive doctors and the lack of critical thinking they often seemed to display. As a problem solver, I started looking for answers on my own via books, podcasts, and even diving into some clinical studies with my math and stats background. I wanted to get deeper into a topic and to explore/ideate on a potential future career deviation. Along the way, I discovered MWSHS—to my great satisfaction."



As Nikki delved into the Western-Herbalism module, we wondered what she thought about its structure and format, and here she related: "I appreciated the ability to start and complete a large portion of the program all on my own and at a pace that fits my lifestyle. I knew that I could easily commit to the Western Herbalism part over a few years, and once complete, feel comfortable assessing if I wanted to continue towards the full Master-Herbalist program, which I am actively pursuing now. I appreciate that it covers a broad range of information and doesn't require a healthcare prerequisite, since my degree is in mathematics."

How, though, did Nikki pace her studies in the coursework? "I typically dedicate a day or weekend to a full lesson," she explained, "and if the weather permits try to be outside while reading and writing. My career is spent in front of screens, so it's a perfect way for me to disconnect and focus on something completely different that requires no technology." As to study methods she found most helpful, Nikki told us: "I take the lesson questions out of the binder and familiarize myself with them before reading the lesson, so I can fill out answers when I come across familiar key words or phrases. I never rush myself or treat it like a chore. When studying for the tests, I create flashcards and quiz myself when I have free time. My husband also quizzes me, frequently adding his own comical impersonations or by-lines, making me laugh and not take life too seriously." *(Continued in column 2)*

Recent Graduates

We offer congratulations to the following recent graduates of the Western-Herbalism Module:

Katie Schneider

Cheryl Wempner

Denise Johnson

We offer congratulations to the following recent graduate of the Asian-Herbalism Module:

Nikki Stoddard

We look forward to hearing more from all these graduates as they continue to apply what they have learned in their lives!

Nikki Stoddard Profile *(continued from column 1)*

For anyone considering studying with MWSHS, Nikki had this to say: "Knowledge is power, especially when it relates to health. Understanding why and how something works within our bodies is empowering and can really provide the confidence needed to become an advocate for yourself and your tribe. Whether you choose the study program by MWSHS for personal or professional growth, know that it literally supports life over death."

What, though, are Nikki's current herb-related projects and passions? "Currently, I'm trying to grow medicinal herbs around my yard and in my home and have discovered that I do not possess a green thumb naturally. I continue to study different topics relating to holistic health, with an emphasis on science and research. Then, too, my non-fiction book collection has grown exponentially in the last decade, with some favorites being *Radical Medicine*; *World Without Cancer*; *Doctoring Data*; *Dissolving Illusions*; and *The Nature of Animal Healing*."

As to the future, Nikki informs us: "I have not attended an in-person workshop yet but am really looking forward to that part of the program next year, after I check off all the exam requirements. My lifelong goal is to continue to research, learn, and go down rabbit holes as different subjects pique my interest. At 42, I'm still trying to figure out what I want to be when I grow up!"

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WORKSHOP CREDIT OPTIONS

Except where noted, all of the below-listed events qualify as Workshop credits toward the Master-Herbalist program. Each hour of *verified* attendance (e.g., per instructor-completed workshop-credit slips as supplied by MWSHS) counts toward an equivalent hour of Workshop Category #3 credits (up to the student limit of 20 hours), unless another category is specified or unless one attends a particular workshop at one of these events that is *strictly* in one of these other categories.

Workshops, Conferences, Lectures, & Events in Herbal Studies Across North America

3rdAnnual Southeastern NC Herbal Conference, *November 7-8, 2026*. **Burgaw, NC**. A two-day gathering featuring hands-on workshops, community activities, and learning opportunities with experienced herbal teachers. For more info, see the website at: https://sencherbalconference.com/

Wild-plant and mushroom foraging classes are offered by **Four Seasons Foraging,** through January, including *Winter's Wild Edibles* on *January 12th, 2027,* at the Lebanon Hills Visitor Center, 860 Cliff Road Eagan, MN, 55123**.** These qualify for our Wild-Plant Walks workshop category. For more info or to register, see www.fourseasonsforaging.com/events

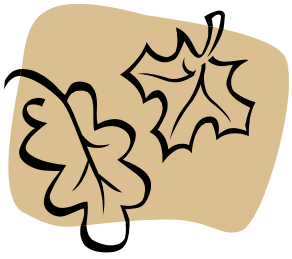
Wild Medicine Conference. *April 30–May 2, 2027*. **Nauvoo, AL.** For more info or to register: https://www.wildmedicineconference.com/

As MWSHS Students Know, Wild-Plant Walks Are an Important Part of Herbal Education!

We endeavor to offer three of these walks every summer, as we did this year. Our longest walk is always the last one of the year, conducted in September. This is always a fascinating, in-depth walk. And so, in this issue of the *MWSHS Student Newsletter* we feature a write-up of our September walk, illustrated with color photos, in which we review some of the plants encountered, comments offered by the walk leader (MWSHS director Matthew Alfs, MH, RH), and student reactions to the walk. You can read this report on page 7. We hope that you enjoy it and that it whets your appetite for attending one or more MWSHS wild-plant walks next summer!

Herbal Conference/Symposium Reports (A New Feature Coming Soon!)

In each forthcoming issue of the *MWSHS Student Newsletter* (published three times a year), we are planning on featuring a national or regional conference/symposium report by one of our students or graduates who winds up attending one of these. (We may even publish some of these in *Interim Student Newsletters* as well.) Stay tuned!



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Modified Citrus Pectin: A Warrior against Cancer and Toxic Metals!

(Nutraceuticals, Part Six)

by Matthew Alfs, MH, RH(AHG)

As MWSHS students who have progressed into the nutritional segment of Part Two in the Western-Herbalism module know, pectin is a gel-forming polysaccharide fiber occurring in the cell walls of citrus fruits and apples, the primary physiological benefits of which are highlighted in the text (p. 222) as being lipid-lowering, antitoxin, antidiarrheal, and antithrombin. However, these effects are largely confined to the intestinal lumen, as this complex fiber cannot be absorbed by the small intestine. (Its antithrombotic effects are a notable exception to luminal confinement, as they occur indirectly when colonic bacteria ferment pectin into short-chain fatty acids like acetate and butyrate. These byproducts then enter the bloodstream and travel to the liver and circulatory system, where they exert systemic anti-inflammatory actions that downregulate pro-thrombotic signaling and improve vascular endothelial health.)



The Utilizability of Modified Citrus Pectin

While pectin also offers valuable immune and detoxification support within the gut, research shows that these systemic effects are dramatically amplified by a specialized form of this fiber known as *modified citrus pectin (MCP)*, or fractionated pectin. Derived from citrus peels, MCP undergoes controlled enzymatic, pH, and temperature treatments in a laboratory. This process breaks the massive pectin structure into low-molecular-weight fragments tiny enough to readily cross the small-intestine wall and enter systemic circulation. A prominent commercial example of this nutraceutical is PectaSol®, produced by EcoNugenics®, Inc.**,** which is available in powdered form, to be taken at least 30 minutes before or two hours after a meal, drugs, or mineral supplements.

One of modified citrus pectin's greatest claims to fame is its ability to act as a competitive inhibitor of galectin-3, a carbohydrate-binding protein (a lectin, specifically) that serves as a critical upstream driver in the pathogenesis of metastatic cancer. It is to this phenomenon that we will first turn our attention. We will follow that discussion with research on MCP's application for eliminating heavy metals from the body.

Modified Citrus Pectin and Cancer

Research on MCP relative to cancer dates back to the early 1990s. This work owes its momentum to pioneering preclinical studies demonstrating that low-molecular-weight pectin fragments could successfully cross the gut barrier and inhibit galectin-3, which lectin had been recognized since 1987 as a key factor in cancer metastasis. The foundational proof-of-concept work was conducted by D. Platt and A. Raz in 1992, followed by pivotal studies—such as Inohara and Raz's 1994 mechanistic exploration and a landmark 1995 oral prostate model by K. Pienta et al.—that solidified MCP's status as an inhibitor of galectin-3 and metastasis in animal models.[1-3]

Building on this foundation, a number of animal studies emerged in the subsequent decades to provide additional support.[4-9] Concurrently, researchers initiated studies on human cell lines that revealed similar therapeutic results,[10-16] while a combined mouse and human cell study also yielded positive outcomes.[17] Considered together, these investigations and additional studies summarized in an extensive 2022 review[18] revealed that MCP exerts powerful, beneficial effects across a broad spectrum of malignancies. These include prostate, breast, ovarian, gastric, bladder, lung, colorectal (including metastasis to the liver and lungs), hepato-cellular, skin, thyroid, and brain cancers, as well as melanoma.

Clinical trials evaluating MCP began toward the end of the 20th century. The earliest clinical data was unveiled in May 1999 at the *International Conference on Diet and Prevention of Cancer*, by Strum et al.,[19] who presented preliminary pilot data showing that MCP could slow prostate-specific antigen (PSA) doubling times (PSADT), a marker of cancer progression. (A shorter PSADT predicts a higher risk of metastasis, thus demonstrating that the intervention successfully slowed the disease.) The finalized data from this phase II pilot study was formally published in 2003, investigating the utilization of PectaSol dosed at 14.4 grams (g) daily in thirteen men with prostate cancer who exhibited measurable PSA values after local treatment (radical prostatectomy, cryosurgery, or radiation). After twelve months of treatment, MCP successfully increased the PSA doubling time in seven of the ten patients who were able to be evaluated.[20]

In 2007, a prospective, open-label pilot study explored the tolerability and clinical efficacy of oral MCP (5 g, three times a day) in 49 patients diagnosed with a variety of advanced, progressing solid tumors, including colorectal, breast, lung, and prostate cancers. Altogether, 29 participants were evaluable for clinical benefit after two cycles of treatment. The therapy was well tolerated and led to disease stabilization in eleven patients (22.5%),

with six of those individuals (12.3%) maintaining stabilization longer than 24 weeks. Notably, one patient with metastatic prostate carcinoma experienced a 50% decrease in serum PSA after sixteen weeks of treatment, accompanied by reduced pain and improved quality of life. Overall, six patients (20.7%) demonstrated significant quality-of-life improvements.[21]

Fourteen years later, a multi-center study evaluated a group of 59 patients with non-metastatic, biochemically relapsed prostate cancer who received oral treatment with PectaSol at a dose of 4.8 g, three times a day, for 6 months. At the end of this initial period, 46 participants (78%) responded to therapy: 34 (58%) exhibited decreased or stabilized PSA levels, 44 (75%) showed an improved PSADT, and all maintained negative diagnostic scans. [22]

Two years later, the authors reported the long-term results of the same cohort after an additional twelve months of MCP treatment. During the transition between study phases, seven patients withdrew to continue therapy independently out of pocket, leaving 39 participants to complete the extended phase. Of these remaining men, 33 (85%) achieved a durable, long-term response: 24 (62%) manifested decreased or stable PSA levels, and 35 (90%) experienced an improved PSADT. Crucially, diagnostic scans remained negative for all 39 participants throughout the 18-month duration.[23]

This summarizes the relevant published research on modified citrus pectin and cancer. In my own clinical practice, I have used MCP since 2002 in over 40 people afflicted with cancer. In every case where the client maintained consistent supplementation, metastasis was not observed. In the small number of cases where supplementation was discontinued—whether by client choice or due to financial constraint—metastasis developed in some of them, and that within a relatively short interval. I recognize that this is a clinical observation without a control group and it is offered as a signal warranting further study, not as proof of efficacy. But the pattern is consistent enough that I continue to recommend MCP for every client I see who has cancer.

Modified Citrus Pectin and Toxic Metals

The systemic accumulation of toxic metals compromises health across multiple physiological systems by downregulating endogenous antioxidants and generating reactive oxygen species (ROS) that damage lipids, proteins, and DNA. Concurrently, these toxins impair mitochondrial ATP production, disrupt immune surveillance, and inhibit critical metabolic enzymes. A prime example of this enzymatic interference is the capacity for toxic metals to block the peripheral conversion of thyroxine (T4) into the active thyroid hormone triiodothyronine (T3), leading to a functional hypothyroidism via what has been called "Low-T3 Syndrome" ("euthyroid sickness" being the orthodox medical term). Here, a sufferer will typically approach his or her physician with a wide range of symptoms usually connected with hypothyroidism and the doctor will test TSH and sometimes Free T4 and find them in range—while at the same time opting *not* to test Free T3—and then may dismiss the patient's symptoms as psychosomatic. Sadly, there are many folks in our modern society experiencing this type of treatment by the orthodox medical establishment—to their great detriment. (I know, because scores of these unfortunate folks have wound up in my office over the years.)

Toxic metals—and especially mercury and lead—may also dysregulate the Hypothalamic-Pituitary-Adrenal (HPA) axis, impairing cortisol-mediated immune regulation. Together, these effects can contribute to autoimmune disorders, including Hashimoto's thyroiditis (particularly associated with mercury and lead), rheumatoid arthritis (associated with cadmium, lead, and mercury), and lupus (associated with mercury, lead, cadmium, nickel, and uranium). Beyond immune-mediated effects, cadmium and/or arsenic accumulation can even contribute to type 2 diabetes, while both metals plus mercury and lead can damage reproductive function.

Neurological disorders are another area where toxic metals can be contributory. (Note that three elements mentioned below—copper, manganese, and selenium—are essential trace minerals that become neurotoxic at elevated concentrations, so that the associations mentioned refer to excess exposure or dysregulated homeostasis.) These include Alzheimer's disease (connected with aluminum, arsenic, cadmium, mercury, nickel, tungsten, uranium, and lead), Parkinson's disease (connected with aluminum, nickel, mercury, lead, beryllium, antimony, cadmium, copper, and manganese), multiple sclerosis (connected with mercury, lead, cadmium, arsenic, and aluminum with the progressive nature of the disease as opposed to its relapsing-remitting stages), amyotrophic lateral sclerosis (connected with aluminum, arsenic, cadmium, lead, mercury, nickel, manganese, copper, and uranium), and neurodevelopmental disorders such as autism (connected with mercury, lead, cadmium, and aluminum—the latter based on the postmortem brain tissue analysis by Christopher Exley et al.[24]). Heavy metals can also damage the cardiovascular system, via hypertension (lead, cadmium, arsenic, mercury, nickel, manganese), atherosclerosis (lead, cadmium, arsenic, mercury, copper, chromium), cardiomyopathy (cadmium, lead, cobalt, thallium, aluminum), anemia (lead, cadmium, mercury, arsenic, copper), and ventricular arrhythmia (arsenic, lead, cadmium, antimony).

Might MCP be of help in chelating toxic metals out of the system? Published studies have indeed verified this function—at least for a number of metals. Firstly, a series of laboratory and animal studies (1977–2000)[25-28] established the mechanistic basis: MCP contains a

specific sugar structure (rhamnogalacturonan-II) that binds toxic metals such as lead, cadmium, and arsenic while leaving beneficial minerals (calcium, iron, zinc, copper, magnesium) untouched. This selectivity was confirmed first in solution, then in rat gut tissue, and finally in whole rats, where the pectin reduced both absorption and tissue accumulation of lead.

Building upon this preclinical foundation, the first human clinical trial—conducted in collaboration with the USDA and UC Davis—was published in 2006. In this trial, eight healthy volunteers were given 15 g/day of MCP for 5 days and then 20 g on day 6. A 24-hour urine sample was collected on days 1 and 6. In the first 24 hours of MCP administration, urinary excretion of arsenic increased by 130%. By day 6, cadmium and mercury excretion each increased by 150% and lead by a whopping 560%! However, aluminum, beryllium, nickel, and uranium were not affected. Importantly, there was no increased urinary excretion of any of the beneficial minerals (calcium, iron, magnesium, zinc, and copper).[29]

In 2007, five case reports were published in which modified citrus pectin achieved significant results in chelating toxic metals from patients carrying a documented heavy-metal body burden. The intervention was either modified citrus pectin given as 5 g, three times a day, or an MCP/alginate complex (PectaSol Chelation Complex by EcoNugenics). Key individual results were as follows: Case #1 was a 59-year-old male with prostate cancer who used the combo for three months—adding PectaSol Detox Formula™ (the name later evolved into PectaSol Detox Complete®) by EcoNugenics, Inc. after the second month until the trial was completed at three months—and who experienced a 49% decrease in his lead burden. Case #2 was a 64-year-old female who used the PectaSol Chelation Complex for six months, achieving a total elimination of her lead burden and an 83% decrease in her mercury level, with improvement in her pre-existing anxiety and depression. Case #3 was a 67-year-old male with chronic prostatitis, fatigue, and allergies who took the MCP/alginate complex for nine months and achieved an 80% reduction in his mercury level plus improvement in his symptoms. Case #4 was a 45-year-old male with hypocortisolism and a failure to gain weight and experience restorative sleep who took the MCP/alginate combo for seven months and achieved a 58% drop in his mercury burden, as well as gaining 10 pounds and experiencing improvement in his energy level and sleep pattern. Most impressive, however, was case #5, who was a 57-year-old male participant who achieved a 73% decrease in mercury with the MCP alone (taking 5 g, three times a day, for a twelve-month duration), but experienced rising levels after the MCP was discontinued for nine months—clearly establishing the efficacy of the intervention but also establishing ongoing exposure to mercury.[30]

Shifting the focus to pediatric populations, a landmark 2008 study investigated the effects of oral MCP on seven Chinese children, ages 5–12, all with blood lead >20 µg/dL measured by GFAAS, and no prior chelation for three months. They were given 15 g of the product (PectaSol by EcoNugenics, Inc.) in three divided doses daily for 28 days, with blood and 24-hour urine measured at days 0, 14, 21, and 28. The results were a 161% average percent change in blood lead levels and a 132% increase in urinary lead excretion. As with the 2006 trial described above, there was no depletion of beneficial minerals.[31]

In a study published eleven years later, involving a family of six in the Phoenix, AZ area with documented low-level uranium exposure (their home water showed cautionary levels), an intervention of modified citrus pectin and sodium alginate was provided in a two-to-one ratio. It was dosed as 2,250 mg, twice daily, for six weeks, with fecal and urine samples taken at baseline, day 6, and week 6. The positive result was that fecal uranium excretion increased significantly by day 6 and persisted through week 6, while the urine showed no detectable uranium (consistent with uranium's renal handling). Then, after the six-week washout, the fecal excretion decreased in five of six subjects, confirming that the effect was supplement-driven and not from ongoing exposure. Interestingly, this is the first report of *any* supplement promoting uranium excretion in humans.[32]

The four human studies reviewed above are, to date, the only ones that have been performed and as noted, have demonstrated clearance exclusively for lead, arsenic, uranium, mercury, and cadmium. (Cigarette smoke, incidentally, is the largest contributor to bodily accumulation of the latter metal.) Clearly, we need studies on the other toxic metals. However, based on the four studies reviewed above, I have used PectaSol's modified citrus pectin (usually in the form combined with alginate—now called Pecta Clear Detox Powder) with several clients showing elevated levels of arsenic, mercury, and cadmium and have observed positive results with repeat testing from the same lab. (My most-used product for toxic metals in general, though, has been NDF® [now known as NDF® Detox], produced by BIORAY®, which utilizes chlorella and cilantro, and with positive results from repeat testing in over a dozen clients so far.) For lead, however, I have not needed to implement anything other than ground ivy (*Glechoma hederacea*), the herbal medicine historically used for this purpose, as it has always proven successful in my practice, as confirmed by labs.

Conclusion

This ends my discussion of modified citrus pectin. I hope that it has been informative and has stimulated interest on the part of MWSHS students.

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MWSHS' September Wild-Plant Walk: Educational and Enjoyable!

On September 13th, eight herbalism students joined MWSHS Director Matthew Alfs for a delightful, 2.5-hour, wild-plant walk through a riverside park in the northern suburbs of the Twin Cities! All in all, over 30 different plants were identified and their healing gifts elaborated.



One of the plants encountered by the group was bristly greenbrier (*Smilax tamnoides*) [pictured above], a close relative of sarsaparilla, and a plant not readily found in the Twin Cities area. While generally not used by modern Western herbalists, Native Americans implemented the plant medicinally. For example, a decoction of the stems was utilized by the Choctaw as a general tonic, while the Iroquois poulticed the bark onto the eyes to draw out foreign substances.

Also identified during the walk was sneezeweed (*Helenium autumnale)*, which director Alfs explained was a plant used by Native-Americans to effectuate a sneeze to clear a stuffed-up head cold/headache, while a related species in the Western states was put into service to expel a woman's afterbirth (placenta).

Some other interesting medicinal plants encountered included prickly ash *(Zanthoxylum americanum*); horseweed (*Conyza canadensis*); clearweed (*Pilea pumila*), a valuable but little-known antifungal plant; cocklebur (*Xanthium strumarium*), the leaves of which are used for nervous hyperhidrosis and for prostatitis; and nodding bur marigold [beggar ticks] (*Bidens cernua*), related to the species of commerce, *Bidens pilosa*, that has been found helpful for persons with the tick-transmitted illness babesiosis and for malaria.

Director Alfs also pointed out the differences in identification between riverbank grape [frost grape] (*Vitis riparia*) leaves and fruit and those of Virginia creeper (*Parthenocissus quinqefolia*), noting that mistaking the latter vine's fruits for those of the former and ingesting them would be a very unpleasant experience!

Another toxic plant identified and discussed was white snakeroot (*Eupatorium rugosum*, traditionally; but recently reclassified as *Ageratina altissima*). Director Alfs showed students how to differentiate between this plant and its close relative, the medicinal plant boneset (*Eupatorium perfoliatum)*, pointing out how that white snakeroot's leaves are stalked whereas boneset's are unstalked. He also explained how that cows grazing on small farms in the midwestern states in the 1800s that would consume the plant would wind up concentrating a poisonous alcohol, tremetol, in their milk, inducing neurological toxicity ("milk sickness") and often death in persons who consumed it. (Sadly, ingestion of this milk killed many thousands of people in the 1800s and even Abraham Lincoln's mother.)



Matthew Alfs points out bristly greenbrier to the student group.

Feedback from the students was most positive, although there was a bit of melancholy owing to the realization that this was the last plant walk to be held this year. MWSHS' next wild-plant walk will be conducted in June, 2027.

Obituaries:

We are saddened to report the August 31st death of **Wendell Berry**, the beloved Kentucky poet, essayist, and author of more than 40 volumes, at age 92. Berry was a powerful inspiration to so many individuals who appreciate a simpler, more natural lifestyle and who treasure nature's wonders. See the obituary by Hillel Italie in *The Independent*: https://www.the-independent.com/arts-entertainment/books/news/wendell-berry-death-author-kentucky-b3042581.html

Also passing—just three days later, at the age of 88—was **Terry Lemerond,** founder of several dietary-supplement companies (including the professional lines PhytoPharmica and EuroMedica) and an advisor to health-food stores via a regular column in *Vitamin Retailer* magazine. Terry was an icon in the supplement industry and will be greatly missed. See a detailed obituary and reminiscence by Mark Blumenthal of the American Botanical Council here: https://www.herbalgram.org/news/press-releases/2026/terry-lemerond-tribute/

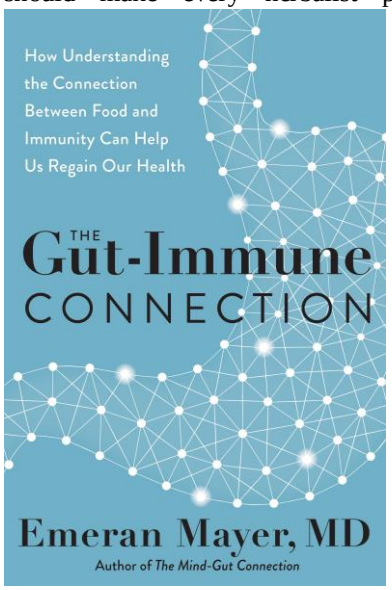
Book Reviews

In this issue of the *MWSHS Student Newsletter*, we present a book review relating to immune health, in line with the theme of immune support exemplified in our article on modified citrus pectin (pages 3-6) and in view of the soon onset of "cold-and-flu season." Enjoy!

Mayer, Emeran. *The Gut-Immune Connection*, Harper, 2021, softcover, 304 pages, $27.99 (hardcover), $17.99 (softcover)

Reviewed by Sylvia Burgos-Toftness

The science that forms the foundation of this book should make every herbalist profoundly heartened



because it confirms what holistic healers over the centuries have observed: that what we eat has a direct impact on the health of our bodies, our minds, and our emotions. This book not only substantiates those linkages, but also documents in great detail the dramatic climb of chronic diseases as evidence of 75 years of poor diet, exercise, and lifestyle; soil degradation; and the ever-increasing use/abuse of drugs. Dr. Mayer lays out the science linking these factors to the downward spiral in our health and the rise of chronic diseases across industrialized societies swimming in ultra-processed foods/non-foods. And, like a holistic practitioner, he provides pathways to reclaim health by pointing us to the foods, recipes, and meal schedules that can help us move to health.

Grounded in more than four decades studying brain-body interactions, Dr. Mayer describes the molecular-, organ-, and system-level interconnections, inter-dependencies, feedback loops, and cycles between gut health and function (the *connectome*), the microbes (microbiome) that live and work within our digestive system, our brain, and the foods we eat. He stresses the need to apply the principles of systems network science: everything is connected.

Mayer carefully explains how the shift to highly processed foods/non-foods breaks critical connections between the physical gut and its microbes, thereby leading to diabetes, digestive inflammation, depression, asthma, arthritis, Parkinson's disease, Alzheimer's disease, and a host of other chronic conditions.

The author builds his arguments logically and thoroughly. He first helps us to understand the fundamental neurological and hormonal interrelationships between the gut and the brain: the conversation between them is looped and continual. He then explains the very significant difference between the gut and the microbiome: the trillion microbes in the gut can quickly adapt to the food it encounters. However, the cells and mucus of the stomach, small and large intestine do not evolve quickly, and this creates drastic mismatches that affect health long term.

The good doctor provides dozens of detailed case studies and carefully walks us through significant research in this field. His examples illustrate the need and challenge of thorough diagnosis. For example, he writes about a farmer who, during an office visit, complains of infrequent bowel movements and the recent development of sleep interrupted by nightmares and vocalization. Mayer's investigations, coupled with access to cutting-edge research, found that these symptoms could be harbingers of Parkinson's disease, the symptoms of which might not appear for 15 years. Regular use of herbicides and pesticides across his patient's farm could have contributed to this situation. Mayer's advice included a plant-based diet and more regular exercise to help the farmer remain as healthy as possible. The farmer eventually left industrial farming and became an organic grower.

Mayer takes us through detailed explanations of the gut-immune connections in sections on depression, Parkinson's, cognitive decline, Alzheimer's, autism, sleep deprivation, sedentary lives, and the impact of stress on the human immune system.

The value of this book lies not only in the full description of the ties between the brain, the gut, and immunity, but also in the information that helps us understand the power of healthful meals and a time-restricted eating schedule. Mayer provides sample recipes to deliver the protein, vitamins, fiber, polyphenols, and essential fats needed to regain health.

The detail, heavy documentation, readability, and logic in this book is worth a read—and re-read—by every holistic practitioner and enthusiast.

Sylvia Burgos Toftness is in the MWSHS Master-Herbalist program. Her work life has included television news, teaching English at the University of Minnesota, years in public relations, and grazing cattle. She and her husband David now devote their farm to medicinal permaculture.



Below, we print some workshop credit slips to use for workshops not conducted by MWSHS

WORKSHOP CREDIT SLIP

Workshop Title:.....

Workshop Total Hours .....

Workshop Presenter & Credentials.....

Workshop Presenter's Signature & Date.....

Student Name..... Student I.D. #.....

When completed and signed by workshop instructor, make a copy for yourself & submit to:

Midwest School of Herbal Studies, P. O. Box 120096, New Brighton MN 55112

Or image as a .pdf and send as an email attachment to us at MWSHS@aol.com

(For Internal Use Only:) Credits Assigned..... Director's Signature.....

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