Celebrating 20 Years of DIFM: Thoughts from Our Founding Members

Compiled by Jena Savadsky Griffith, RDN, IHC, Editor

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Rosalyn Franta-Kulik, MS, RD, FAND, 1st Secretary, Chair 2002-2003
Sarah Laidlaw, MS, RDN, CDE, Newsletter Editor 2000-2017
Cheryl Galligos, MA, RDN, 1st Nominating Chair, Chair 2000-2001

It’s difficult to imagine that a little more than two decades ago, DIFM did not exist. By most standards, 20 years is young; there is still so much more to accomplish! However, recognizing this milestone gives us a needed opportunity to reflect; appreciate the courageous, visionary, and hard-working pioneers that came before us; celebrate; and reinvigorate.

In 1998, the philosophies of IFN were a revolutionary approach for RDNs; certainly in some circles, they still are. We’d like to acknowledge the original members for understanding the potential role IFN RDNs could play in health care, allowing many of us to have a place to feel at home within the Academy and an opportunity to carry that vision forward.

We recently asked 4 of the 115 charter members to give us a few of their insights regarding the evolution of DIFM, thoughts on their participation, and suggestions for the future.

Ruth: I’m thrilled to see how DIFM has grown into the vision the founders had for the DPG. It wasn’t easy back in the late ‘90s to sell the idea that consumers would embrace the organic movement, dietary supplements, alternative approaches to health, and nutritional genomics and that nutrition professionals should be the ones providing advice in these emerging areas. Now look where we are! DIFM has led the way in providing opportunities for science-based learning so that members are well-informed and able to provide sound guidance to their clients.

Rosalyn: Exploding technology allowed the DIFM DPG to thrive and become an amazingly accessible and valuable resource for many Academy members. We were the first DPG that was formed with the intention of being “connected” primarily through the internet. But ADA Headquarters staff told us we couldn’t require prospective board members to have email addresses. (Conveniently, all 8 of the original 1999-2000 officers had email addresses.)

Sarah: I am not sure much has surprised me. Knowing how resourceful and forward-thinking RDNs are, the one thing I am not

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In preparation for this 20th anniversary issue, I had the opportunity to read personal member accounts, old newsletters, and many annual reports to piece together a historical timeline. Examining this history gave me perspective, appreciation, and even more respect for those that came before; I hope it does the same for you. The idea of a few determined RDNs gave over 5000 of us a place to be among like hearts & minds; learn from each other; positively impact not only our own health, but the health of our families and communities; and importantly, forge a path for the rest of the Academy to follow. Their early efforts are confirmation, as Margaret Mead told us, that a small group of thoughtful, committed (and organized) citizens can be agents of change. I see the same passion and devotion today within our executive committee, on the newsletter team, members that I meet, and especially students. Students understand that in order to truly achieve optimum health, we must widen the umbrella to include all of a person’s humanity (integrative) and deepen the physiological exploration to get to the most basic equations of biochemistry (functional).

Importantly, this issue focuses on integrative and functional approaches to mental health. Today we can no longer address mental health in isolation, but rather in the context of whole-body systems. No longer an illness “in the head,” assessment of gut health; lifestyle; environment; genetics; and the mind, body, and spirit of those afflicted should be included. The bidirectional communication between gut and brain allows IFN practitioners an opportunity to impact mental health by addressing imbalances in the gut microbiome. Mental health issues can be simple and specific or more often extremely layered, but an IFN RDN has many tools and possible collaborations that can assist. Articles on nervines (herbs that influence the nervous system), the principles and application of yoga therapy, and the identification of specific genotypes have potential roles in intervention and are included in this issue.

Preparation for FNCE® has also been ongoing for months. In honor of our 20th anniversary, we’re throwing a party on Sunday, October 21st. Please come celebrate with us! DIFM starts with an outstanding lineup of speakers for our symposium on Saturday, October 20th and finishes with our DPG showcase on Monday. In our virtual world, coming together in person is not only a luxury but a revolutionary act. I always leave more inspired than when I arrived. Please come by and tell us what you like, what you’d like to see more of, volunteer to write a review for one of the symposium sessions, or just to say hello. You can always email me at jenas_mailbox@yahoo.com or catch up with me on Instagram @Jenagrd. Look forward to meeting you and thank you for reading…

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Upcoming Issues
• Winter 2019, Editor’s Deadline, October 1, 2018
• Spring 2019, Editor’s Deadline, January 1, 2019
• CPE Deadline December 15, 2018
• Summer 2019, Editor’s Deadline, April 1, 2019

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I’ve always loved the fall season for making a fresh start. It’s my favorite time of the year and the perfect time for new beginnings. This fall DIFM is gearing up for FNCE® in Washington, DC. We are hosting a fantastic pre-conference symposium and having a big 20th birthday bash for our members. Our symposium is the perfect time to meet and network with other members and get specialized training in IFN. We are thrilled with this year’s presenters: Lise Alschuler, ND, Terry Wahls, MD, and Robin Foroutan, MS, RDN. Will I see you there?

As I mentioned last month, we’ve also been busy creating a fresh new space online. Our website team has been working hard behind the scenes preparing for an October roll out (fingers crossed!). One of the things I’m most excited for is moving the EML listserv from Yahoo! Groups directly to our website. This has been on the Leadership Team’s to-do list for years, and we are excited to finally make it happen! As Integrative RDs, we incorporate IFN in many different types of practice settings. We know that creating specific focus-area communities inside DIFM will make it easier for you to communicate with each other in a more meaningful way.

Which is why I’m so excited for our new mind-body focus this year! We’ve brought Anu Kaur, MS, RDN, RYT-500, onto the Leadership Team as our new Mind-Body Therapy Chair. In her role she will help create a community within DIFM for the growing number of RDNs who are seeking additional training in mind-body modalities to help complement nutrition counseling and MNT.

Yoga is one of my essentials for personal wellness. I rarely miss a Friday night SPA yoga class and look forward to that time each week to wind down and bliss out. Although for me yoga is a form of self-care, for many it can have therapeutic effects. In our fall newsletter, we dive deeper into the therapeutic aspects of yoga and its role in not just mental health, but also bone and heart health, cancer, diabetes, and more.

I hope to see you this October in Washington, DC, at our Saturday symposium, our members-only birthday bash, or during our DPG showcase! And if you’re interested in learning more about our new Mind-Body Therapy initiative or volunteering on the committee, please find me and let’s chat—we’d love to have you on board!

Danielle

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surprised about is how many individuals have embraced the concepts and begun businesses, written books and courses, and become an integral part of many physician-led health care teams. One element that has been somewhat surprising is the widespread acceptance and use of cannabis in medicine, and not just IFM.

Cheryl: Not really surprised but pleased at the increase in membership in the past 20 years and expansion of programs and benefits. It was a struggle in the beginning to recruit members, be accepted by the members of the ADA, and acquire funding for projects and programs; but the founders of DIFM persevered. The DIFM dietitian pioneers had a vision for what, at that time, was known as Nutrition in Complementary Care (NCC) and a dedication to see the practice group be accepted and promoted. For those of us who have been around for many years, we remember when supplement companies were nonexistent in the exhibit hall at the annual meeting. What a change compared to today, not only in the availability of products/companies, but research and accepted practice theories and application.

What part of your involvement with the DIFM DPG has meant the most to you?

Ruth: I loved the early years working with the wonderful people who birthed this DPG and spent untold hours doing all the behind-the-scenes work that went into growing a new DPG. There were so many educational areas that needed to be addressed, not to mention the mound of paperwork required. The willingness of so many people to lend a hand was truly gratifying.

Rosalyn: Working with so many passionate professionals taught me a great deal about the future direction of our discipline. Because I'm now retired, I have the luxury of “cherry-picking” which aspects of nutrition I’ll follow. DIFM DPG tops the list, because I view health from a systems biology perspective. Areas of particular interest to me include the interface between diet/nutrition and epigenetics, the microbiome, and the timely IFM topics addressed in our fabulous newsletter. (Kudos to Ruth DeBusk and Sarah Laidlaw for its stellar quality these past two decades!) Nutrition is far more interesting than when I was in college so long ago!

Sarah: Of course, the newsletter. But also networking with many brilliant and up-and-coming leaders in IFM. Being invited to and having the opportunity to participate in IFM activities such as AFMCP sponsored by The Institute for Functional Medicine, authoring chapters for books and educational modules.

Cheryl: What meant the most to me is the friends and colleagues I had the privilege to work with during my tenure with the practice group. I keep in touch with a few but monitor the activities and accomplishments of those who are still active within the practice group and the Academy. In the beginning the core group, which was small, accomplished much to get the DPG started and to be recognized for what it is today—the nutrition experts in integrative and functional medicine.

Any advice to new members?

Ruth: Dietetics is so fundamental to health. With the escalating prevalence of chronic disease worldwide, you can expect the years ahead to be full of opportunities for your services. Find an aspect that you’re passionate about, commit to lifelong learning, and make a contribution back to the profession in whatever way you can.

Rosalyn: Congratulations on joining this cutting-edge DPG! I encourage every forward-thinking dietetics professional to join DIFM DPG-18 and take advantage of its many benefits. I continue to learn a great deal from the discussions on the DIFM Listserv/EML.

Sarah: Do not be afraid to jump in with both feet. Many of your associates started with little to no experience in the area and learned as they went along. Use the network to your advantage as well as the EML.

Cheryl: Always honor your ethical values as a dietitian serving your patients, clients, etc, and utilize evidence-based research and knowledge as your “textbook” for providing care/information. Be active within your association, DPG, and within the political arena as an advocate for the “little guy”—not only an advocate for excellence in nutrition but also excellence for your community, however it may be defined.

Other thoughts you’d like to share?

Ruth: Effective health care in an era of chronic disease requires critical thinking, a strong foundation in genetics, biochemistry, metabolism, physiology, neuroscience for behavioral change—you name it. We get the foundation for all of this through our university years, but there has to be follow-on learning in both the underlying sciences and practical applications. Helping members keep abreast of new learning is a tall order for any DPG, but DIFM has worked hard to address the need for education and also to provide a forum where members can share experiences and learn from each other. It’s wonderful to see so many members benefitting from DIFM’s services.

Rosalyn: More than any other DPG, DIFM addresses gut health/gut nutrition. GI health is one of our core competencies. What an opportunity for DIFM DPG to “own” GI health for the entire Academy! I’m amazed that there’s not a dedicated DPG for GI health.

Sarah: IFM is the way of the future. Clients and patients are no longer given (or should not be given) generic and cookie-cutter education. Each person is an individual with
unique needs and should be seen and treated as such. It takes time to determine what is the best approach for them, but in the long run, it benefits both of you.

Cheryl: I’m so sorry to miss the 20th year celebration of the practice group. I was able to get to Chicago last year and was in awe of the many changes and improvements in the annual meeting. I really enjoyed attending the DIFM Saturday workshop and activities as I was able to see friends I hadn’t seen in years. The content matter of all the educational sessions was excellent and as an “older dietitian,” I was amazed at the nutritional care practices being provided in all areas of dietetics but especially in DIFM. I wish I could be there, and thanks to all for keeping the NCC vision going. I sincerely appreciate the opportunity to provide comments for the celebration!

We thank Ruth, Rosalyn, Sarah, and Cheryl for taking the time to give us their thoughts. Without their efforts and beliefs about how nutrition could be practiced, we may not be reading this newsletter.
Dietary Effects on APOE-ε4: Using Nutrigenetic Knowledge to Reduce Alzheimer’s Risk

Melissa Walter, MPH, RDN, LDN

Introduction

Alzheimer’s dementia is a progressive neurodegenerative disease that affects 5.7 million Americans, or 1 in 10 people over age 65. By 2050, this number is expected to rise to nearly 14 million. While there are medications to assist with early dementia symptoms that include cognitive, behavioral, mood, and psychological changes, there are currently no long-term treatments or cures. In 2018, the Alzheimer’s Association estimates that the direct costs of care for those with Alzheimer’s will total approximately $277 billion ($186 billion of this as Medicare and Medicaid payments), making it one of the most costly medical conditions our society must support. Indirect costs of care—those borne by unpaid caregivers such as family and friends—are just as substantial. Twice as many dementia caregivers, versus caregivers of people without dementia, report significant emotional, financial, and physical costs. Because the number of Americans ages 65 and older is projected to more than double by 2060, with that age group’s share of the total population rising to nearly 24% (from 15% today), the cost of Alzheimer’s to the American population could be staggering. The World Health Organization and the G8 Dementia Summit noted that dementia and Alzheimer’s disease “must be declared a public health priority.”

Causes of Alzheimer’s Disease

Alzheimer’s disease (AD) appears to be a disease of multifactorial cause: age, genetics, lifestyle, diet, and environment, as well as inflammation, vascular conditions (heart disease and hypertension), and metabolic conditions (obesity and diabetes), all seem to influence its development. There are various forms of AD, but all involve both abnormal lipid metabolism—cholesterol is critical for axonal growth, synaptic formation, and remodeling in the brain—and the production and impaired clearing of amyloid-beta (Aβ) peptides in the brain. These Aβ peptides, which break off from larger proteins in the membrane around nerve cells, aggregate and form plaques. The smaller pieces can then trigger inflammation and block cellular signaling at nerve synapses, while the plaques can injure synapses—leading to neurodegeneration and dementia.

Table 1 summarizes these alleles and the associated risk for AD development.

<table>
<thead>
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<th>APOE Allele</th>
<th>Allele Frequency</th>
<th>Risk of AD</th>
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<tbody>
<tr>
<td>ε2</td>
<td>7%</td>
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<td>ε3</td>
<td>79% (most common variant)</td>
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</tr>
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<td>ε4</td>
<td>14%</td>
<td>main genetic determinant of AD</td>
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Early-onset AD (<1% of AD cases) is generally caused by any of three gene mutations that are passed from parent to child. Late-onset AD, the most common form, has many modifiable risk factors, generally including those similar to cardiovascular risk factors: hypertension, hypercholesterolemia, heart disease, diabetes, smoking, alcohol consumption, smoking, obesity. There are also psychosocial risk factors for AD: loneliness, depression, and social isolation. Unmodifiable risk factors for late-onset AD include older age and the presence of the apolipoprotein E epsilon 4 (APOE-ε4) genotype—a common cause of impaired lipid metabolism, Aβ peptide aggregation, and plaque formation.

What is APOE, and why is ε4 bad?

The APOE gene codes for the formation of apolipoprotein E (APOE), a protein that packages and carries cholesterol and other fats through the bloodstream to maintain normal cholesterol levels and vascular health. APOE is found throughout the body, including the brain, where it aids in brain development, maintenance, and repair. Everyone has two alleles for the APOE gene, and the APOE gene is polymorphic with three main allelic forms. Each allele form impacts the risk for developing AD differently—APOE-ε2 appears to reduce Alzheimer’s risk, ε3 is the most common variant, and ε4 is the main genetic determinant of AD. One may also have a combination of these. Table 1 summarizes these alleles and the associated risk for AD development.

APOE-ε4 appears to increase risk for vascular dementias, independent of other vascular AD risk factors.

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Alzheimer’s disease risk associated with APOE-ε4 appears to be influenced by lifestyle and diet. A 2014 study published in *Lancet Neurology*, using relative risks from existing AD meta-analyses from 2005-2014 and adjusting for non-independence of risk factors, suggested that up to a third of AD cases can be attributed to seven risk factors: diabetes, hypertension, obesity, sedentary lifestyle, depression, smoking, and low education. The study suggested that a 10% to 20% reduction of all these risk factors might decrease AD prevalence by 8.7% to 16.3% in the United States in 2050. Of these risk factors, diabetes, hypertension, and obesity are all factors that can be addressed nutritionally—and are risk factors that appear to work synergistically with the APOE-ε4 allele to create even greater risk than each of the conditions alone. For example, people who have diabetes and are APOE-ε4 carriers have more Aβ plaques, neurofibrillary tangles (tangled protein strands which limit the movement of nutrients through cells), and cerebral amyloid angiopathy (vascular disease in the brain) than those with either condition alone, further increasing Alzheimer’s risk. A 2008 study looked at the effects of various lifestyle-related factors and APOE-ε4 carrier status on dementia. Subjects for the Cardiovascular Risk Factors, Aging, and Dementia (CAIDE) study were randomly drawn from previously studied individuals from 1972-1987. After an average follow-up of 21 years, 1,449 individuals aged 65 to 79 years were re-examined in 1998. Adjusting for age; sex; education; body mass index; serum cholesterol; systolic blood pressure; history of myocardial infarction, stroke, and diabetes mellitus; and subtypes of dietary fat intake, researchers determined that lack of physical activity, high intake of saturated fats, low intake of polyunsaturated fats, frequent alcohol use, and smoking, when combined with the presence of the APOE-ε4 gene, increased dementia risk significantly more than these factors in the absence of the APOE-ε4 gene. More recent evidence continues to support the concept that diets high in saturated fat are associated with Aβ accumulation, as well as with Alzheimer’s risk. There is some evidence that vitamins B6, B12, and folate are protective, helping to reduce homocysteine levels—which, when elevated, appear to increase both cardiovascular and AD risk. In addition, antioxidants (vitamins A, C, and E), and vitamin D may offer some protection, though this protection appears to come from nutrient intake in whole foods but not supplements.

### Dietary Interventions for APOE-ε4 Carriers

The Mediterranean diet, the MIND diet (Mediterranean-DASH Intervention for Neurodegenerative Delay), the Japanese diet, and other diets high in omega-3 fats may offer the most significant Alzheimer’s risk reduction—for those with any combination of APOE alleles. The Mediterranean diet, which is high in fish, fruits, vegetables, and whole grains—thus low in saturated fats and high in omega-3 fats, antioxidants, and polyphenols—has been shown to support vascular and heart health and has been shown to confer a 33% risk reduction over the traditional Western diet in the development of Alzheimer’s if followed moderately, with up to 54% risk reduction if followed rigorously. The MIND diet—high in omega-3 fats and the above nutrients but also in other “brain-supportive,” antioxidant, anti-inflammatory foods (Table 2)—has been shown to confer up to 53% risk reduction in AD even if followed moderately. These diets both also include moderate intake of red wine, which appears to decrease formation of Aβ plaques. The ketogenic diet is one that has been theorized to be beneficial in AD because AD-afflicted brains appear to utilize ketones more efficiently than they are able to utilize glucose. However, though there appears to be a slight cognitive benefit in mild to moderate AD, this effect holds only in APOE-ε4 negative people, perhaps due to the detrimental effects of high saturated- and trans-fat diets in those with the APOE-ε4 gene. Nutrigenetics in Alzheimer’s—specifically, how variants of the APOE gene affect response to dietary patterns and nutrients—is still in its early stages, although the clinical translation of the genetic marker into practice is promising. The National Institutes of Health recommends genetic testing only for those participating in research studies, citing concern at interpretation of APOE markers given that many people who carry one or two copies of the APOE-ε4 allele never develop AD. In addition, there is some evidence that APOE-ε4 may be more detrimental to women than to men, though loss of estrogen with age independently increases Aβ accumulation regardless of APOE type. However, given the ample evidence that dietary choices influence AD risk directly and indirectly (by decreasing incidence of dementia) it is important to consider the role of lifestyle factors in the onset and progression of AD and to utilize dietary recommendations that may be beneficial in reducing the risk of dementia.

### Table 2. An Overview of the MIND Diet (Mediterranean-DASH Intervention for Neurodegenerative Delay)

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<thead>
<tr>
<th>Foods to Include</th>
<th>Foods to Limit</th>
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</thead>
<tbody>
<tr>
<td>Whole grains: 3+ servings per day</td>
<td>Red meat: &lt; 4 servings per week</td>
</tr>
<tr>
<td>Leafy greens: 6+ servings per week</td>
<td>Fried/Fast food: &lt; 1 time per week</td>
</tr>
<tr>
<td>Other vegetables: 1+ servings per day</td>
<td>Butter/margarine: &lt; 1 tablespoon</td>
</tr>
<tr>
<td>Berries: 2+ servings per week</td>
<td>Cheese: &lt; 1 time per week</td>
</tr>
<tr>
<td>Poultry: 2+ servings per week</td>
<td>Sweets: &lt; 5 servings per week</td>
</tr>
<tr>
<td>Fish: 1+ serving per week</td>
<td>Beans: 3+ servings per week</td>
</tr>
<tr>
<td>Nuts: 5+ servings per week</td>
<td>Olive Oil: Primary oil used</td>
</tr>
<tr>
<td>Wine (red or white): 1 glass per day can benefit, but alcohol not required component of diet</td>
<td></td>
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contributory disease), knowledge of one’s APOE genotype may galvanize individuals to commit to a lifetime of healthier dietary patterns.

**A Call to Action**

Alzheimer’s dementia is a disease with the potential to become a public health crisis, with devastating costs to individuals, families, communities, and our supporting social, institutional, and financial infrastructure. As dietitians, we are likely to be called to the table to offer much-needed nutritional support for those who develop AD—maintaining adequate intake, food access, food safety, feeding support, etc. However, dietitians can impact AD outcomes at every stage of the disease. As we counsel young people, we can assess their familial, dietary, and lifestyle risk factors. In fact, today we can even use genetic testing to determine whether they are carriers of the APOE-ε4 allele and may want to take extra care to reduce dietary risk factors that would increase their chances of developing the disease. As we work with people in midlife, we can counsel them on nutrient-dense, low–saturated fat dietary patterns—such as the MIND diet, Mediterranean diet, DASH diet, or Japanese diet—to maintain a healthy weight and improve vascular and brain health as they age. And as we work with older adults—who are hungry for knowledge about how to maintain their cognition and their active lifestyles as they age—we can continue to encourage and support these healthy dietary patterns. Our role, as dietitians, may be critical in slowing the advancement and impact of the disease in the coming decades.

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**DIFM AT FNCE® 2018**

*Extinguish the Flame: Integrative & Functional Approaches to Neuroinflammation, Neurodegeneration, and Cancer*
Saturday, October 20, 2018
Walter E Washington Convention Center
801 Mt Vernon Place NW, Washington, DC 20001
9 am – 9:45 am
Registration/Exhibits/Welcome

9:45 am – 10 am
*Preview of Best Available Evidence: A New Clinical Decision Tool to Guide Critical Thinking presented by Mary Beth Augustine, RDN, CDN, FAND*

10 am – 11:30 am
*Metabolic Drivers of Cancer and Associated Integrative Strategies presented by Lise Alschuler, ND*

12:30 pm – 2 pm
*Approaches to Treating Neuroinflammation and Neurodegeneration presented by Terry Wahls, MD*

2:30 pm – 3:30 pm
*Tackling Difficult Cases: Where to Begin presented by Robin Foroutan, MS, RDN*

**Sponsors:** Gaia, Innate Response, Pure Encapsulations and Pascha Organic.

**DIFM’s 20th Birthday Bash!**
Sunday, October 21st, 7 pm – 10:30 pm
Marriott Marquis
900 Massachusetts Ave NW
Dancing with Capital DJs, open bar, photo booth, and member gift. Please join the party!

**DPG Showcase**
Monday, October 22nd
Walter E Washington Expo Hall B
9 am – 12 pm
Booth # 2932


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Botanical Nervines

Dina Ranade, RDN, RH (AHG), IFNCP

The American Psychological Association’s annual publication Stress in America: State of the Nation reported in 2017 that alongside money, work, violence, and crime, people worry about health care and the country’s future. One-third of people experience disabling anxiety in their lifetimes—more women than men and most commonly during midlife. Forty-five percent lie awake at night, and greater than 50% lack emotional support. Many seek no pharmaceutical or psychological treatment. Sixteen million people live with debilitating depression, half with anxiety disorder comorbidity. An annual report published by Mental Health America reveals six out of ten young people experiencing a major depressive episode—those most at risk for suicidal thoughts and difficulties in school and in relationships—received no treatment to support them.

The human nervous system at a stressful edge impacts digestive function as well as emotional well-being. The gut-brain axis, a parallel pathway consisting of the autonomic nervous system and the hypothalamic-pituitary-adrenal (HPA) axis, facilitates communication between the enteric and central nervous systems (CNS). The complex enteric nervous system (ENS) within the gastrointestinal tract wall interacts with all cell types modulating motility, secretions, pain perception, and inflammation. Exposure to chronic stress causes dysregulation of the gut-brain axis which may be causative in the development of gastroesophageal reflux disease (GERD), peptic ulcer disease, functional dyspepsia, inflammatory bowel disease, and irritable bowel syndrome (IBS). High prevalence of anxiety and depression accompanying IBS signals the need for a multifactorial approach that includes dietary alteration, pharmacotherapy, and psychological evaluation and treatment. Emotional well-being has been linked to decreased severity of IBS symptoms.

Treatments that effectively relieve tension, nervous exhaustion, and emotional fragility are needed whether related to gastrointestinal-based distress, generalized anxiety and depressive disorders, or insomnia. Current pharmaceutical and cognitive behavior therapies are producing suboptimal results. Anxiety, depression, and sleep disorders, frequently found together, follow complex neuronal pathways that may benefit from treatments targeting multiple neuroendocrine systems. The biologically active metabolites of botanical medicines such as nervines modulate neuronal targets through interaction with neurotransmitters and neuroreceptors that support mood and cognitive resilience. Herbs can act on numerous neuronal targets to stimulate and sedate the CNS. The nervine materia medica represents a botanical medicine category with diverse and vast benefit for modern-day concerns.

Nervines are a broad herbal action category that influence the nervous system. Classification of botanicals by action streamlines selection and formulation. Herbal actions define specific botanical performance in the body. Herbs have multiple actions, and one action may affect various body systems. The nervine botanical exerts a positive but diverse effect on the nervous system. Nervines have impact throughout the body often overlapping with other actions such as adaptogenic, anxiolytic, antidepressant, sedative, and analgesic. The distinction is a nervine’s nutritive support for the nervous system. These herbs fortify, rehabilitate, and strengthen nervous tissue directly over time. As a varied group, nervine herbs are divided into four subcategories: tonics, relaxants, hypnotics, and stimulants.

Nervine tonics strengthen and nourish the nervous system with a unique restorative ability to heal damaged nerves. Specific indications

Table 1. Nervine Herbs by Subcategory

<table>
<thead>
<tr>
<th>Herb Common Name (Latin Name)</th>
<th>Nervine Tonic</th>
<th>Nervine Relaxant</th>
<th>Nervine Sedative</th>
<th>Nervine Stimulant</th>
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<td>Bacopa (Bacopa monnieri)</td>
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<td>Peppermint (Mentha x piperita)</td>
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<td>Valerian (Valeriana officinalis)</td>
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Contact Dina at dranade976@gmail.com.
include chronic stress, long-term anxiety, nervous debility, damaged nerve tissue from physical trauma, and nervous exhaustion. The premier botanical in this category is the fresh milky top of *Avena sativa*, the same plant that produces oatmeal.

The large relaxant nervine subset includes a wide spectrum of botanicals used for varied degrees of stress and anxiety. Strength ranges from gently calming to strong nighttime sedatives. Many are mild enough for children. Shared antispasmodic action contributes to relaxation of muscle tension, digestive spasms, and pain relief, especially in association with peripheral nerves. Relaxants such as linden flower, lemon balm, chamomile, and catnip relieve tension. Stronger hypnotics such as valerian, skullcap, hops, and kava at higher doses induce sleep and are used short term.

Nervines in the stimulant category may seem counterintuitive in situations of nervousness or anxiety, but these can be relaxing and stimulating at the same time. Nervines such as rosemary or peppermint, classified as stimulants, can provide an uplifting spark to an exhausted nervous system by increasing circulation and providing nourishment that results in improved rest. While some nervous system stimulants contain caffeine, others are used therapeutically to stimulate restoration.

Most nervines act within the autonomic nervous system balancing heightened sympathetic or hindered parasympathetic response states. Specific indications include prolonged stress and tension, anxiety, mood disturbances, and lack of sleep.

**Table 2. Nervine-Specific Indications**

<table>
<thead>
<tr>
<th>Herb Common Name</th>
<th>Anxiety</th>
<th>Stress/Tension</th>
<th>Depression</th>
<th>Sleep Disturbance</th>
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<thead>
<tr>
<th>Herb Common Name</th>
<th>Bitter Tonic</th>
<th>Nervous Stomach</th>
<th>Stress-induced Diarrhea</th>
<th>GERD</th>
<th>Gas/Bloating</th>
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Botanicals have specific affinities for organs, systems, or body functions. While nervous action corresponds to the nervous system, these botanicals also impact related systems through their secondary actions. As an example, nervines affect digestion through carminative, anti-inflammatory, and antispasmodic actions. The reciprocal relationship between emotional stress and digestive disorders manifested as dysbiosis, GERD, and stress-induced diarrhea can be addressed together with botanical nervines.  

Physiologic symptoms accompanying chronic stress such as increased blood pressure or heart rate, decreased circulation to internal organs, pain, fatigue, cognitive changes, and emotional irritability can be addressed with nervines through secondary actions. Attention to these actions aids in determining specific herbal choice to meet individual needs.

Nervine and adaptogen functions often overlap, but the actions are not the same. Adaptogens involve regulation or support of the endocrine system. These herbs affect the HPA axis modulating stress-related hormones such as cortisol. Adaptogens help the body adapt to nonspecific stress, but overuse can create adrenal exhaustion. Nervines do not work via hormones, instead interaction with the nervous system is direct.  

Botanicals classified with the nervine action can empower inner healing through restoration of emotional balance by nourishing nerves and the nervous system. Nervines are impactful for long-term stress, when strength or resilience are worn down. Botanical medicines offer alternatives as a first-line approach or adjuvant to that which is already in place such as pharmaceutical or cognitive behavior support. Nervine herbs become an important botanical category for the nutrition professional as many can be incorporated into daily meal plans as food or beverage. Like food, herbs nourish, strengthen, increase resilience to stress, and rebuild. This may be in the form of a delicious herbal tea formula, such as lemon balm, linden flower, chamomile, and catnip, or a restorative fresh milky oat tops tincture. If viewed like a menu, the botanical diversity in plants has the potential to meet as many needs as a well-balanced, personalized food plan. The foundational nervine action compounded by multiple secondary actions affords a rich source of possibility. Referral to a clinical herbalist or physician who incorporates herbal medicine into their practice for formulation of more complex herbal therapies offers even greater potential for physical and emotional well-being.

### Table 4. Nervines and Secondary Actions  

<table>
<thead>
<tr>
<th>Herb Common Name</th>
<th>Digestion</th>
<th>Heart Palpitations</th>
<th>Emotional Irritability</th>
<th>Cognitive Function</th>
<th>Pain</th>
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References


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www.ihssymposium.com


Don’t miss this clinically relevant, evidence-based medical conference in New York, NY. The 15th edition of the Integrative Healthcare Symposium is designed to educate, inspire and connect healthcare professionals and practitioners with all levels of integrative healthcare knowledge. Together attendees will further their understanding and implementation of alternative and complementary approaches to healthcare! Medical doctors, doctors of osteopathic medicine, naturopaths, chiropractors, homeopaths, nurses, dietitians and nutritionists are just some of the 100 plus attendees coming to the conference.

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Or from the other website: https://integrativerd.org/event/integrative-healthcare-symposium-difm-discount/
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For research, nutrition facts, cooking tips and more, find everything you need for all things pomegranate!

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Use these sites as tools to better understand and advance the conversation on pomegranate polyphenols and their impact on the body:

- Pubmed.gov/?term=pomegranate
- WonderfulPomegranateResearch.com

Features

- Over 100 studies on pomegranates, dietary polyphenols and ellagitannin structure.
- How to purchase, store and prepare a pomegranate.
- Glossary from Anthocyanins to Zeaxanthins including graphic of phenolics in 100% pomegranate juice.

Research Areas Include:

- Antioxidants & Bioavailability
- Athletic Performance
- Cognition and Memory
- Gut & Microbiome
- Nitric Oxide
- And more…

Key Findings:

- 100% Pomegranate Juice contains four times the antioxidants, on average, of green tea. The same in vitro study at UCLA found that pomegranate juice has, on average, more antioxidant capacity than red wine and grape juice[1].
- 100% pomegranate juice may have a positive impact on post-workout muscle strength. A preliminary study on 17 athletic men found that drinking 16 fl oz. of pomegranate juice daily for 2 weeks, with an additional 8 fl oz. ingested immediately after exercise on day 8, helped maintain more post-exercise arm strength versus the placebo group. Statistically significant results were not found for knee strength. These are early findings and research with larger populations is needed to establish causation and confirm long-term effects on muscle strength recovery[2].
- A pomegranate polyphenol study shows memorable results: A preliminary 2013 UCLA study found that a small group of 19 older adults with age-related memory complaints who drank 8 fl oz. of pomegranate juice daily had increased verbal memory performance and functional brain activity in fMRI testing after four weeks. Further clinical research on larger populations is needed to help establish causation and to determine the long-term effects of pomegranate on memory and cognition[3].


For the whole body of research on pomegranates go to:
http://www.pubmed.gov/?term=pomegranate
Integrating Yoga into Nutrition Therapy

Beverly Price, MA, RD, RYT 200, C-IAYT, CEDRD-S

Beverly Price is a certified eating disorder specialist, International Association of Eating Disorder Professionals (IAEDP) Foundation–Approved Supervisor, and International Association of Yoga Therapists (IAYT)–Certified Yoga Therapist recognized for her mindfulness yoga-based eating disorder recovery programs, along with yoga training programs in eating disorders for professionals. Beverly has created, cultivated, and sold various health care businesses. In her career, she has also consulted with health care entities who wish to maximize their bottom line. You can contact Beverly at Beverly@beverlysprice.com or through her website at https://beverlysprice.com.

Introduction

Yoga is an ancient Eastern practice that has been in existence for thousands of years. Americans have westernized the practice of yoga, as classes are popular in studios and gyms around the country. Recently, yoga therapy, which differs from a yoga class, has come to the forefront. Yoga therapy is the application of teachings and practices in a therapeutic context in order to support a consistent yoga practice that will increase self-awareness and engage the client’s energy in the direction of desired goals. Yoga therapy training incorporates the following elements:

- Foundational understanding of yoga theory and practice
- Biomedical and psychological foundations
- Teaching and therapeutic skills
- Yoga therapy tools and their applications
- Professional practice that includes legal, regulatory, and ethical issues pertaining specifically to yoga therapy

The goals of yoga therapy are to eliminate, reduce, or manage symptoms; improve function; prevent the occurrence or reoccurrence of underlying causes of illness; improve health and wellbeing; and help clients change their relationship to and identification with their condition. Yoga therapists are now certified through a governing and accrediting body, the International Association of Yoga Therapists (IAYT), based on evidence-based practice and peer-reviewed literature. In addition, standards of practice that differentiate between a yoga therapist and yoga teacher are now emerging.

RDNs may be interested in becoming yoga therapists, or collaborating with certified yoga therapists within their communities, to offer comprehensive, integrated care for their clients. Just as any other health care provider completes an assessment and develops a plan of care, the yoga therapist’s assessment involves collection of information to develop a client-centered, integrated treatment plan. The IAYT has developed guidelines for the yoga therapy assessment which include the following:

- Current health care information relevant to the work of a yoga therapist treating his/her respective population
- Pathologies, co-occurring disorders, drugs, surgical procedures
- Evaluation of the physical, energetic, mental, emotional, and spiritual dimensions of well-being
- Breath patterns
- Posture and movement patterns

The yoga therapy treatment planning process may include a client-centered recovery plan based on the assessment, implementation of the yoga therapy treatment plan, and communication with the treatment team (physicians, psychotherapists, occupational therapists, etc).

Yoga therapy addresses the physical, emotional, and spiritual components of the healing process through innervation of the chakras. The chakras are aligned in an ascending column from the base of the spine to the top of the head, and each chakra is associated with multiple physiological functions. (See Figure 1.) The body’s chakras parallel two chains of nerve bundles located on each side of the spinal cord. Activating these chakras, through yoga, releases emotional pain imprisoned in the body as physical pain around the spinal cord. An interesting parallel may be created with the chakras to incorporate discussion on a physical, emotional, and spiritual level as it relates to chronic illness and the healing process (See Table 1).

The chakras also mirror the wellness domains that include physical, social, occupational, emotional, environmental, intellectual, and spiritual dimensions.

Yoga’s benefits for physical and emotional health are many. Examples of some common western ailments and how yoga benefits these conditions are as follows:

- Bone Health:
  - Weight-bearing exercises improve bone health by stimulating the bones to retain

Figure 1. Illustration of the chakras. Reprinted from Wikimedia Commons, 2016.
Yoga and Mindfulness

Studies have discovered that mindfulness can bring out positive emotions and suppress negative emotions and stress. Practicing mindfulness meditation can boost the immune system and help fight off illness. Mindfulness helps focus, which can combat distractions and improve attention.

A study that looked at stress reduction showed that mindfulness-based therapy may be useful in altering affective and cognitive processes that underlie multiple clinical issues. The study also indicated that mindfulness teaches clients to use alternatives to avoidant-based coping and recognize underlying reasons for maladaptive behaviors.

The cerebral cortex is the center of the brain that is responsible for impulses, irrational thoughts, and behaviors. Mindful yoga and meditation can positively affect the cerebral cortex, improving focus and awareness. Activating the cerebral cortex can diminish impulsivity along with irrational thoughts and behaviors involved in eating behaviors and nutrition beliefs.

Yoga and Eating

Based on the effect of yoga on the central nervous system, it would understandably follow that yoga can help delay impulses. Through yoga, clients may find themselves in postures that are difficult or awkward. Learning to stay within the poses and work through these postures can help the client, who feels an urge to binge or practice unhealthy food behaviors, delay acting on this urge.

Clients learn to tolerate uncomfortable emotional states without running toward food or drugs for comfort or numbing out by turning away from food. When in various yoga poses, postures are held for a certain length of time while maintaining the breath. Often, clients tend to want to “run away” from uncomfortable situations and/or are ambivalent about nutrition therapy. Practicing yoga can help maintain discipline, help clients to feel and...
accept uncomfortable emotions, and avoid overeating and other impulsive behaviors.

For many clients, part of weight homeostasis is learning to tune in to the body’s signals of hunger and satiety. Eating only when hungry and stopping when the body is satisfied will result in the body slowly returning to its natural weight. Individuals who have attempted to control their weight through dieting are fearful of allowing themselves to decide when and how much to eat. Yoga can help those with weight and food issues trust their body and understand the messages given to them. With consistent yoga practice, the physical discomfort of over or undereating potentially becomes more obvious as body awareness increases, and sensations become more apparent. This can make it easier for clients with eating disorders to choose to stop eating before the point of physical discomfort as well as honor hunger and nourish the body.

Yoga also emphasizes mindfulness. Clients learn to experience the taste, texture, and other sensual qualities of food. They also learn to begin to make thoughtful versus impulsive choices related to eating behaviors and daily life decisions. Mindful awareness, which emphasizes “observing” versus “reacting” to daily stresses in life, also comes into play for clients who are repulsed by food. Staying present is another important concept learned in yoga—when the mind starts to wander, clients are taught to draw their attention back to the breath. Although many poses are uncomfortable, others are also meant to be enjoyable, thus teaching clients how to engage into life and “let go” of whatever they are holding on to that may be hindering their health. Clients begin to “take their yoga off the mat” and find their edge—a term in yoga that is used to describe the balance between challenging oneself and overdoing—in everyday life. Finding their physical edge can help peel away layers and may allow them to tap into an emotional and spiritual edge.

**The Therapeutic Yoga Asana Practice**

An individual with more advanced disease may benefit from a gentler hatha (a system of physical yoga techniques) intervention, along with yin yoga, which focuses on flexibility of the connective tissue as opposed to muscular engagement. Emotions tend to be elicited in these postures, where the client is unable to avoid feeling these emotions based on attachment to their disease.

A larger-bodied individual may find either vigorous or slower-paced yoga will be based on preferences. As part of a thorough assessment, yoga therapists identify risk factors, such as hypertension and type 2 diabetes, which will guide the development of a therapeutic yoga practice. Avoiding intense yoga postures and flows are recommended if the individual is not monitored and managed well in the disease process. For the yoga therapist who practices in a private setting, client self-monitoring of blood pressure and/or blood glucose is crucial with available results guiding the respective day’s yoga postures. When a client has a history of gastric implications, including gastric bypass, balloons, or sleeve, a slow hatha practice with modifications may be indicated, along with yin or chair yoga.

**Yoga in the Community**

As the client transitions back into the community-based yoga, it is helpful for them to identify a place to continue their yoga practice. A gym or studio can be a progression for the client who is higher functioning, weight- and risk factor–normalized/managed, and who is empowered to understand that not all of the postures and word choices directed by the yoga teacher may be appropriate for them. Clients should be at the point in their individualized treatment plan where they are able to filter out general movement or nutrition advice sometimes encountered in fitness settings which may not apply to them. It is important that the private practitioner, who is referring to a yoga teacher or studio in the community, understands the yoga culture of the respective community. Practicing yoga at various studios is helpful for the referring practitioner to safely advise clients where they might practice yoga in the community. A home practice may also be prescribed for the client.

**Conclusion**

In summary, the yoga practitioner can observe whether or not the client sinks into the postures, as a metaphor for sinking into their life, or whether they hold back with tension and apprehension. Often, attachment to their respective condition is the root of the tension that clients may be experiencing physically and emotionally. Yoga therapy can help move clients forward with awareness. However, it is difficult for a client to let go or release something if they are unaware of the subconscious behavior or attachment. By observing and recording body language, including the resistance the client may be experiencing, the yoga practitioner can become more in tune with what is going on in the moment. The yoga therapist can then consult with the treatment team in order to garner the team’s support in helping the client uncover what may be holding them back from participating fully in their own life.
References

Julia Whelan is a foodie at heart who also happens to be a dietitian. She believes in food's natural ability to nourish our bodies and understands, in great depth, how to harness food's power so we can feel our best.

Follow her on Instagram at @acoupleddietitians.

Tarah Allen is currently working towards her Masters of Science in Nutrition and Dietetics at Bastyr University. After graduation she is interested in pursuing a career in integrative and functional medicine, with an emphasis on maternal-infant care and pediatrics. Contact Tarah at tarah.allen@bastyr.edu.

Upcoming Conferences and Educational Opportunities


Electronic Mailing List (EML) Recent Topics Review

In recent threads on the DIFM listserv, members discussed various treatments for lupus. A systemic autoimmune disease, lupus attacks tissues and organs causing inflammation. Several common recommendations discussed the addition of a gluten-free diet, regardless of reflexive panels. Other members attributed the addition of a dairy-free, alcohol-free, and vegetarian diet as having positive patient outcomes in reducing lupus-associated inflammation. In particular, members emphasized the importance of addressing GI integrity. Battling the medication regimen was presented as another challenging aspect of clinical nutrition while treating lupus. Often patients will be on prednisone or immunosuppressive therapies including chemotherapy. The appetite and GI side effects can often result in nutritional complications. Members stated this as one of the reasons for making gut health a main priority. Some suggestions for gut health included HCl and digestive enzymes. A few members mentioned a correlation between lupus and vitamin D status. Members suggested checking levels to ensure they are in the high 40s or better. Other discussion topics included resolving confusion around magnesium. Absorption of magnesium occurs in the small intestine and colon. Many members sought clarification around the different forms of magnesium. Questions focused on the use of magnesium malate, glycinate, oxide, stearate, and citrate. It was mentioned that malate is useful for muscle pain; glycinate is helpful for anxiety. Magnesium citrate was suggested to be useful for kidney stones and was noted as the most soluble form of magnesium. Oxide was used by some members as a strong laxative. One member stated that magnesium absorption is inversely proportional to the amount ingested. At doses less than 40 mg, it was suggested that about 65% is absorbed and that at doses up to 900 mg, only 15% is absorbed. Some users recommended dosing at 300 mg for females and 400 mg for males. In our commitment to being fair and unbiased, rather than identifying individuals, programs or organizations, discussions regarding certificate programs, testing, and nutrient analysis programs can be found on the electronic mailing list under http://groups.yahoo.com/neo/groups/DIFM_Listserv/info.

What’s New - Journal Reviews and Resources

Nutritional Psychiatry: The Present State of the Evidence

Despite the increased use of common treatments for mental illness, such as pharmacotherapy and psychotherapy, the disease burden and associated disability remains high. The field of nutritional psychiatry studies the evidence for diet quality as a modifiable risk factor for mental illnesses. Healthy dietary patterns are inversely associated with risk for depression and anxiety throughout the lifespan. Diet and depression have been more extensively studied than anxiety, schizophrenia, and bipolar disorder. Suggested pathways implicated in mental illness that may be affected by diet include inflammation, oxidative stress, brain plasticity, the gut-brain axis, and mitochondrial dysfunction. Authors conducted a systematic literature review using keywords related to diet and mental illness which included results from systematic reviews, clinical and observational trials, and meta-analyses. Nutrient-dense dietary patterns emphasizing plant foods and high-quality proteins were inversely associated with mental illness. Mediterranean diets and diets with high intakes of fish, magnesium, iron, and zinc were inversely associated with depression. Successful intervention trials were noted to include one or more of the following: a single delivery mode (either individual or group face-to-face meetings only), employment of a dietitian, and/or specific recommendations for high-fiber diets and intakes of fruits and vegetables. Supplementation with omega-3 fatty acids, specific vitamins and minerals, herbal preparations, and amino acids have yielded varying results. The authors suggested future directions for research including the role of diet.
Use of Dietary Management in Irritable Bowel Syndrome: Results of a Survey of Over 1500 United States Gastroenterologists

A 22-question survey was administered to the members of the American College of Gastroenterology to collect information pertaining to demographics, providers’ interpretation of their patients’ views on dietary therapy, and gastroenterologists’ perceptions on dietary therapy and nutritional counseling in IBS. A total of 14% (1562) of the administered surveys were collected. Nearly 60% of those respondents reported that patients commonly associate food with GI symptoms, and IBS patients most commonly attempt to self-manage their symptoms before seeking the assistance of a gastroenterologist. Most popular among self-management trials in IBS patients is a trial-and-error diet approach to aid in possible symptom relief. Also commonly used by patients is a trial of lactose-free and gluten-free diets for relief prior to seeking assistance. Rarely do IBS patients use a low FODMAP diet on their own. The majority of gastroenterologist respondents reported recommending diet therapy for management of IBS symptoms with the most frequently recommended diet type being low FODMAP (77%). Other dietary interventions recommended were, from highest to lowest popularity, high fiber (45%), lactose-reduced (45%), low fat (18%), and gluten-free (12%). Of note, 85% of the gastroenterologists reported a low FODMAP diet to be the most effective dietary intervention. Only 21% of study participants refer their IBS patients to a registered dietitian for nutritional counseling, and only 30% of those who refer to a registered dietitian do so to a GI-specialized registered dietitian. However, 78% of study participants report that an IBS-specialized registered dietitian would enhance diet therapy interventions for their patients. Female providers were more likely than male providers to refer to a registered dietitian.


Drinking Kefir May Prompt Brain-Gut Communication to Lower Blood Pressure

A research team from Auburn University, in conjunction with University of Vila Velha in Brazil, studied the link between the gut microbiome and blood pressure. Through the administration of probiotic-rich kefir to spontaneously hypertensive rats for nine weeks, the research team observed the rats to have lower levels of endotoxins, lower levels of blood pressure, and improved intestinal permeability compared with the control and untreated rat groups. The scientists also observed the balance restoration of four different bacteria in the gut and the restoration of enzyme in the brain essential for normal nervous system functioning in the treated group of rats. The research team concluded, “Our data suggests that kefir antihypertensive-associated mechanisms involve gut microbiota-brain axis communication during hypertension.” For more information visit: [https://www.sciencedaily.com/releases/2018/04/180425131909.htm](https://www.sciencedaily.com/releases/2018/04/180425131909.htm).

Role of Magnesium Supplementation in the Treatment of Depression: A Randomized Clinical Trial

Depression affects 350 million people worldwide and is predicted to be the leading cause of disease burden by 2030. Current methods of treatment can be expensive and require highly trained therapists. There is a need for additional options to assist in treating depression. Past studies have been done to test the correlation between magnesium supplementation and depressive symptoms. However, this is the first clinical trial done on magnesium for depression in the United States. The aim of this study was to test the effects of magnesium chloride supplementation on mild to moderate depression symptoms in primary care populations. The 12-week randomized crossover design study spanned over two 6-week time periods. Study participants took four 500 mg tablets of magnesium chloride daily (248 mg elemental magnesium per day) during the treatment period. The primary hypothesis was that magnesium supplementation would decrease symptoms of depression with primary outcome measured by the difference in change in Patient Health Questionnaire-9 (PHQ-9) scores taken at baseline and the end of each 6-week study period. The study population included 126 patients randomized into treatment groups. At the end of the 12 weeks, unadjusted PHQ-9 depression scores improved during magnesium treatment with a net improvement of -4.2 points. Participants experienced a decrease in PHQ-9 score within two weeks. A few adverse effects were reported; in one case, nausea and lethargy led to withdrawal after two weeks. Participants did report experiencing other clinically significant positive effects of taking magnesium, including decreases in headaches and muscle cramps. Oral magnesium supplementation was concluded to be safe for use in adults with normal kidney function who are not taking medications that interact with the supplement and when used in dosages below the tolerable upper limit of 350 mg elemental magnesium per day. The adjusted net improvement in PHQ-9 scores was 6 points, which was both statistically and clinically significant. It was mentioned that while the crossover design of this trial decreased internal biases, the authors concluded that it would be beneficial to see the results replicated in a larger clinical trial that tested long-term efficacy and included additional data on subgroups. This efficacy trial showed magnesium supplements may be a fast, safe, and easily accessible alternative, or adjunct, to starting or increasing the dose of antidepressant medications. The authors surmised that magnesium supplementation can provide a safe and inexpensive approach to controlling depressive symptoms.


Hot Nutritional Genomics Topics

The authors describe how nutrigenomics, with proteomics used for biomarkers, can be useful for cancer treatments.

This study among families in Southern California considered five variants in four genes (MTHFR, MTR, MTRR, and DHFR), along with measures of healthy eating, which the authors found to be helpful for personalized nutrition in colorectal cancer prevention.

Among the overweight or obese subjects in Spain who carried the rs10182181 variant of the ADCY3 gene, a lower-fat diet was found to be more effective than a moderately higher-protein diet for weight loss and improved body composition.

Among the Taiwanese subjects tested, the rs5443 variant of the GB3 gene (also known as GB3 825C-T) was found to be associated with greater salt sensitivity for blood pressure increases, which can increase associated cardiovascular risks.

Among the postmenopausal women of European ancestry tested, increased physical activity helped reduce the risk of obesity otherwise associated with a genetic risk score, which was most noticeable among the 70+ age group where the increased risk was no longer significant for those in the highly active group.

Growing evidence suggests that heme iron as found in red meat may be associated with increased risk of colorectal cancer. The authors found that heme can increase risks associated with mutations in several genes (eg, APC, TP53 and KRAS); however, they suggest that dietary calcium, green vegetables, and olive oil may help reduce such risks.

Dietary lead (Pb) is known to be neurotoxic, especially for children. The authors found evidence that certain variants in the GRIN2A and GRIN2B genes can increase such risks and suggest that this finding may have important implications for public health.

Significant middle-aged weight gain was associated with shorter telomere length, and lifetime overweight/obesity was associated with decreased levels of mitochondria. Each of these can result from oxidative stress and/or be involved with obesity-related comorbidities, which shows why lifetime weight management is important.

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A Mind of Your Own: The Truth About Depression and How Women Can Heal Their Bodies to Reclaim Their Lives

Kelly Brogan, MD, with Kristin Loberg
HarperCollins Publishers
2016, 10 hours 20 minutes audio recording available on Audible.com

According to recent data, there are 30 million prescribed users of antidepressants in America. A 2017 report from the National Center for Health Statistics indicates nearly 13% of people ages 12 and older in the United States are taking antidepressant medications. One in seven women are medicated; one in four women between 40 and 50 years old use psychiatric drugs for various indications including grief, irritability, panic attacks, insomnia, PMS, and stress.

In her book, A Mind of Your Own: The Truth About Depression and How Women Can Heal Their Bodies to Reclaim Their Lives, Dr. Kelly Brogan asserts that mental illness is not entirely a psychological problem nor a neurochemical issue. Brogan states no study has proven that depression is caused by a chemical imbalance in the brain. She further claims, “Depression is merely a symptom, a sign that something is off-balance or ill in the body that needs to be remedied.”

Brogan studied cognitive neuroscience at Massachusetts Institute of Technology before receiving her Doctor of Medicine from Weill Cornell Medical College. She is board certified in psychiatry, psychosomatic medicine, and integrative holistic medicine. Part I in A Mind of Your Own takes a provocative look at the history of antidepressant use (and abuse), the evidence indicating long-term use worsens mental health conditions, the assertion that antidepressants are even more difficult to taper than alcohol or opiates, and the connection between the gut microbiome and the immune and endocrine systems. According to Brogan, inflammation is at the root of imbalances in everything from blood sugar to gut health and thyroid function.

Brogan does not mince words when stating that medical schools, medical associations, and pharmaceutical companies all share responsibility and contribute to the soaring rates of antidepressant drug prescriptions. She herself readily admits to having routinely prescribed medication as the first protocol for her patients suffering from symptoms of mental illness. She now adamantly opposes using drugs as a first-line defense and instead focuses entirely on empowering her patients to take charge of their own health.

Brogan takes the reader through what she terms “the new biology of depression.” She includes a review of the latest research indicating how gut microbes and inflammation affect mental health. Former beliefs about mental health indicated depression and anxiety influenced the gut. However, Brogan’s thorough review of the research indicates the opposite is also true. Brogan asserts there are two keys to identifying what is occurring between your gut and brain: (1) understanding the gut’s role in your immune system, and (2) understanding the way the gut works with your hormones, particularly cortisol. She methodically takes the reader through the biochemistry of the gut-brain connection and specifically calls attention to thyroid dysfunction and blood sugar imbalances as two of the most common findings in depressed patients. She has also identified potential influences from beauty products, household cleaning supplies, and over-the-counter medications as contributors.

In Part II, Brogan details her lifestyle recommendations culminating with her 30-day plan to become symptom-free. This includes increasing nutrient density, balancing blood sugar, eliminating inflammatory foods (including all gluten, processed foods, dairy, soy, most sweeteners, nonorganic and GMO foods, unhealthy fats and processed vegetable oils, white potatoes, white rice, corn, beans, and all beverages except pure filtered water), and incorporating regular exercise, meditation, and sleep practices. Prior to beginning the 30-day dietary program, Brogan recommends the following laboratory tests in addition to routine blood analysis and urine testing: TSH, free T3, free T4, thyroid autoantibodies, reverse T3, MTHFR gene variant, vitamin B12, homocysteine, high-sensitivity C-reactive protein (to determine inflammation levels), hemoglobin A1C (to determine balance of blood sugar), and vitamin D. Post 30-day program completion, she recommends stool testing to further detect imbalances in the gut microbiome, a salivary cortisol test, and a urine organic acid test if indicated. She also recommends regular, self-administered coffee enemas.

After the 30-day period, exercise, meditation, and sleep practices continue and some foods can gradually be added back into the diet (like beans and white rice). While calorie counting and portion control are not part of Brogan’s dietary program, she does recommend keeping a food journal to document any symptoms in association with foods consumed.

Included with the book’s audio version is a 34-page supplemental PDF document containing a one-week sample meal plan as well as 19 recipes. Also included are lists of food and beverage items to be excluded during the 30-day program; foods to include (broken down into healthy fats; herbs, seasonings & condiments; whole fruits & vegetables; and proteins); tables of gluten-containing grains, gluten-free grains, and likely food sources containing gluten; different names for added sugars; and foods most and least important to purchase organically.

Some potential drawbacks of Brogan’s dietary plan are that it may be considered expensive and is not geared toward vegan or vegetarian diets. But it is worth further exploring to see if it is suitable for you.
Brogan’s dietary plan is like the Paleo diet—excluding all soy and beans during the initial 30-day period with liberal consumption of organic grass-fed meats, eggs, grass- or pasture-fed ghee, and wild-caught seafood. Brogan insists her patients agree to implement her protocols for the full 30-day period before a second appointment is scheduled.

Critics of Brogan’s conclusions of current research on the causes of depression are quick to point out most studies cited involve research on animals. Human clinical trials are lacking. In regards to treatment, a 2018 systematic review in *Lancet* indicates antidepressants are effective in adults with major depressive disorder. However, the drawbacks of such use are still high. In fact, a 2018 meta-analysis reported a 33% increase in all-cause mortality with use of antidepressants.

After reading *A Mind of Your Own*, readers may have an improved understanding of why depression may develop in certain individuals, including the major lifestyle factors that together influence mental health: our microbiome, nutrition, environmental toxins, sleep, exercise, and meditation habits. Whether or not the reader agrees with her methods, empowering the individual, getting to the root cause of imbalances, addressing nutrient biochemistry and calling on mind body practices is in line with integrative and functional nutrition principles.

Reviewed by Catherine Brown, CDM/CFPP. Catherine is obtaining her Bachelor of Science degree in dietetics from Kansas State University. She holds associate degrees in baking and pastry arts, culinary arts, and health science. Catherine is also a graduate of the Plant-Based Nutrition Certificate Program from Cornell University. Catherine works as a volunteer chef for Share Our Strength’s Cooking Matters programs in New Hampshire. She is also an active student member of Dietitians in Integrative and Functional Medicine (DIFM) where her recipes are featured on the members-only site. Catherine works on intimate farm-to-table catering and is a personal chef. She shares many of her recipes and food tips on her blog, www.chefcatherinebrown.com. Catherine’s recipes have been featured on many prominent blogs and on sites such as Reader’s Digest, and she has been featured on ABC’s The Chew. You may contact her at Catherine@ChefCatherineBrown.com.
DIFM Diary: Summer 2018 Chicago Mini Meet-up
Anita Davila

Anita graduated in 2015 with a BS in Food and Nutrition from the University of Alabama’s distance-learning didactic program in dietetics. She is on her second year as DIFM’s student membership co-chair. Anita is also part of the marketing team helping with the Instagram portion of DIFM’s social media. She spends her spare time with her three children and loves listening to podcasts and audiobooks.

On Sunday, June 3, 2018, a group of DIFM members from Chicago and neighboring suburbs attended a casual networking event at Volumes Bookcafe in the bustling Wicker Park neighborhood. This event featured a wonderful presentation by longtime DIFM member Olivia Wagner, MS, RDN, LDN, titled “Practical Applications of Food as Medicine in the Kitchen.” Her presentation was jam-packed with useful information about specific nutrients and their numerous benefits for our bodies, as well as many practical ways to incorporate them into our diets. The talk focused on herbs and spices, citrus, crucifers and bitter plants, bright-colored produce, omega-3 fatty acid–rich foods, fermented and cultured foods, and amino acid–rich foods. We learned how integrative dietitians can include these nutrients in our “Food-as-Medicine Tool Boxes” and how we can teach clients and patients to consistently be nutrient-seeking in the way they approach their diets and incorporate the food-as-medicine mindset into their lifestyles.

Although “Food as Medicine” is a broad concept without clear cut boundaries, we learned about some of the main goals or considerations during the presentation. The first goal to consider when using Food as Medicine is to optimize cellular reactions and support the physiologic response. There are so many cellular pathways and chemical reactions happening at all times, and all of these are dependent on specific nutrients and compounds which our bodies obtain or make from the foods we eat. When our diets lack a variety of phytonutrients, healthy fatty acids, or essential amino acids, this negatively impacts the optimal physiologic functioning of our cells and body systems. On the flip side, including a variety of nutrient-rich foods will boost the maintenance of body systems and support healing when imbalances are present. The second consideration is to be cognizant that nutrient-rich foods decrease inflammation. This is understood when considering that nutrients have a deep impact on the digestive, nervous, immune, and endocrine systems, which have a front-and-center role in both health and disease. Lastly, the importance of the mind’s ability to create positive physiological and psychological food associations should be recognized. Being mindful of a food’s ability to provide nutrition and energy as well as its potential for improvement of chronic disease symptoms can be a powerful teaching tool so that clients and patients are prompted to make intentional choices for enjoyable and nutritious foods, thus creating a framework to guide eating decisions with health and wellness in mind. Olivia emphasized this last point as an important concept for dietitians when working with clients to promote behavior change.

After the presentation, we had an insightful Q&A session. Attendees inquired and commented about many different topics ranging from specific food and nutrient considerations to the growth of our specialty dietetic practice group and our current endeavors within the Academy. Some of the newer DIFM members wanted to know more about how to implement integrative and functional approaches into their own practices, such as specific functional labs. Interest in this year’s pre-FNCE® symposium and the status of the online Certificate of Training program in Integrative and Functional Nutrition with the Academy’s Committee for Lifelong Learning were also brought up.

Olivia provided samples of her delicious “Phyto-mole,” a phytonutrient-packed guacamole which was a great hit with all attendees. You can find the recipe here on our blog at DIFM’s website www.integrativerd.org. The dip was accompanied by sea salt crackers donated from Simple Mills, a company local to the Chicago area which manufactures crackers, cookies, and flour-baking mixes using simple ingredients. And to top it off and circle back to the topic of beneficial fermented foods, we enjoyed some delicious kombucha with the dip and crackers.

All in all, it was a great event. Attendees provided positive feedback and expressed interest in having more in-person meetings. I was happy to have been able to coordinate this event with the help of Olivia and Lesli Bitel, MBA, RDN, LDN, who is also local to the Chicago area. I also got to meet with Sarah Elster, our new DIFM student liaison with Dominican University in River Forest, Illinois. Stay tuned to learn more about how DIFM is working on outreach to spread our messages to dietetic programs all over the United States.

To coordinate a meetup in your area, contact our membership coordinator Monique Richard at mmr2v@mtmail.mtsu.edu.

References
## Executive Committee List 2018-2019

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