

UPMC Center for Integrative Medicine

Dedicated to increasing knowledge about safe and effective complementary and integrative medicine approaches.

Functional Medicine– A Different Way to Approach Health

Ronald Glick, MD, Karl Holtzer, MD, and Greg Thorkelson, MD

Developments in medicine and public health have allowed us to live longer and have enhanced our quality of life. Unfortunately, with increased life expectancy, we're experiencing greater difficulty associated with chronic illness. This is compounded by lifestyle issues including smoking, obesity, and limited physical activity. The big three conditions, cancer, diabetes, and heart disease, are the leading causes of death and disability and much of our health care dollars go to treat these.

Why do we need a different approach? Beyond these big three, people struggle with a number of chronic conditions, including arthritis, depression, fatigue, insomnia, gastrointestinal problems such as irritable bowel syndrome (IBS), headaches, and fibromyalgia. Each of these can be treated with medications, such as nonsteroidal anti-inflammatories for osteoarthritis or antidepressants for depression. These medications have side effects which may limit their use and many patients experience an incomplete response. Other therapy or rehabilitation approaches can provide further relief of symptoms for some patients. Still, we're left with a large percentage of the population experiencing chronic pain, distress, and disability with an incomplete response to medical approaches.

What's the rationale for functional medicine? If western medicine doesn't hold the entire answer for treating these chronic conditions, should we consider other approaches? Functional Medicine is a paradigm that examines several aspects of our physiology that may be out of balance. Within this system, problems affecting different systems of the body can be caused by common insults. Once identified, these problems may respond to simple treatment approaches such as dietary changes and supplements. For several years before disease onset, a patient may have subclinical disease indicated by abnormal laboratory values and the presence of ill-defined symptoms that do not fit into a classical diagnosis. (1)

What goes wrong to create health problems? Each of the areas mentioned below is a part of our current understanding of factors that contribute to health difficulties or disease. The functional medicine approach looks at these imbalances or areas of dysfunction as an integrated system. For example, abnormal gut flora can cause gut wall integrity problems, which can contribute to dietary intolerances and inflammation. Problems include:

- An abnormal gut microbiome: This is the unique fingerprint that each of us has, with a mix of healthy and potentially problematic

bacteria and other microorganisms that reside in our intestines. Together this is called the gut flora. The association between abnormal microbiome and disease is well established. (2)

- Gut wall integrity problem: This was previously known as "leaky gut". The intestinal lining is supposed to keep out things that are not helpful and absorb essential nutrients. When it's not working, large proteins can sneak through before the gut has had a chance to break them down, leading to food intolerances or allergies, which creates other ripples through the system.
- Food intolerances: Regardless of the initial cause, a number of individuals, with chronic conditions such as IBS, fatigue, or migraines, may have sensitivities or allergies to certain foods. The two most common offenders are milk products and gluten. Either of these can be an intolerance, meaning a little is bad and more is worse vs. an allergy, meaning that any amount causes problems.
- Toxicity: It comes as no surprise that the toxins in our environment find their way into our systems. So it shouldn't surprise anyone that they may have a deleterious effect on our physiology, affecting hormone and enzyme pathways.
- Hormonal dysfunction: Hormones help to keep our metabolism going. Nutritional deficiencies, such as iodine, and medications, such as cholesterol agents are all factors that cause hormones to decline.
- Inflammation: As noted above, lifestyle issues are seen as the biggest contributor to health problems including cancer, diabetes, and heart disease. We refer to a mechanism that causes several events as a final common pathway. Smoking, poor diet habits, inactivity, and stress all cause inflammation. Inflammation may serve as a common final pathway in creating or worsening these diseases. Inflammation is also a factor with conditions such as osteoarthritis and depression.
- Stress: We have the impression from modern media that if we could only eliminate stress everything would be okay. Obviously, we're all pulled in many directions and often face the definition of stress - *when demands exceed our resources to manage them*. When it affects one's health, we look at two things: Was there a period of extreme stress around the time that health problems began and has a person been under a high level of chronic stress?

How does one diagnose problems within a functional medicine approach?

In western medicine health practitioners take a careful history, for example if someone is complaining of chest pain, asking about shortness of breath and other symptoms that might point to the cause. They will also do a physical exam and order appropriate lab tests. The same occurs within functional medicine. As with western medicine, it is

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said that 90 percent of the diagnosis is made by a careful history.

Our tools include:

- **Developmental history:** A careful timeline explores factors from early childhood, going back to pregnancy and birth, then chronologically through a person's life. We focus on the interaction between life events and development of health issues and symptoms. Since gastrointestinal health plays a central role, issues such as the frequent use of antibiotics for a toddler with ear infections is seen as something that might have downstream effects on health.
- **Connecting the dots between symptoms, triggers, and perpetuating factors:** A functional medicine practitioner looks for things that may cause a problem to begin or progress. In looking at past history or family history, certain factors such as genetic influences or specific events, may serve as triggers and bring light to the presenting condition.
- **Exam for signs of nutritional deficiency:** The functional medicine exam primarily focuses on specific nutritional deficiencies that might be present. We look at body mass index, waist to hip ratios, bioelectric impedance, specific findings seen by looking at skin, hair, oral mucosa (tongue/lips), neurologic findings such as loss of sensation to light touch, and vibrational and position sense. (3)
- **Judicious use of labs, investigating:** Balance of organisms in the stool, hormonal or nutritional deficiencies, allergies and sensitivities to foods and environmental factors, signs of metabolic problems. and genetic predispositions

What tools do we have to treat? Therapies within the functional medicine system center around restoring balance to any of the systems in which problems are suspected. In some cases, as with an elimination diet, the intervention is both a diagnostic tool and treatment. Common approaches to treatment include:

- **Dietary changes:** As a poor diet can contribute to health problems, the first thing is helping people make changes to a health promoting diet, with decrease in animal fats and simple carbohydrates and increase in fruits and vegetables. Synergy of food is very important. The way that each chemical and plant-based nutrient interacts with each other and with an individual's unique genetic makeup helps determine the likelihood of developing disease. (4)
- **Elimination diet:** As mentioned, many individuals have difficulties with certain foods. There are two main approaches to testing this out. One can cut out a number of the common offenders all at once, such as with the FODMAP diet. This requires a high level of motivation and commitment. Alternatively, a person can cut out one thing at a time. Even

when testing for celiac disease is negative, gluten may be a problem.

By cutting out all gluten and wheat products for two weeks, an individual may find improvement in symptoms such as fatigue and migraines. A diet eliminating the six food groups (cereals, milk, eggs, fish/seafood, legumes/peanuts and soy) most likely to cause food allergies may provide dramatic benefit for some patients with inflammatory bowel conditions. (5) Gluten intolerance and celiac disease rates are becoming more prevalent. One review suggests a link between gluten intolerance and a range of neurologic and psychiatric disorders. (6)

- **Nutritional supplementation:** Particularly if nutritional deficiencies are suspected, supplementation can be very helpful. Additionally, if toxicity is a factor, in addition to a diet limiting further exposure, specific supplements can help the liver get rid of noxious chemicals.
- **Probiotics and other supplements to support healthy gut flora:** It is helpful to have a wide diversity of healthy organisms residing in our guts. Factors such as a junk-food diet and frequent antibiotics can lead to an unhealthy microbiome. A shift to a healthier diet along with probiotics can help restore balance and may prevent or treat some common health issues. (7)
- **Antimicrobial treatment:** If there is clinical suspicion or lab testing that shows abnormal flora or pathogens (bacteria or organisms which cause disease), nutritional supplements, dietary changes, and at times antibiotics can help restore a healthy balance.
- **Stress management:** Everyone can benefit from activities that help manage stress and find balance in life. Particularly, if stress has contributed to health problems, it becomes more important to help people find something to use each day. Common considerations include yoga, tai chi, meditation, and aerobic exercise.

Where can I get more information: The medical and naturopathic physicians at the Center for Integrative Medicine are available to see patients for consultation. For the self-initiated, a person can get a start on exploring dietary factors by following Dr. Jeffrey S. Bland's [20-Day Rejuvenation Diet Program](#). The professional organization that provides teaching on this approach is the Institute for Functional Medicine and their website is: <https://www.functionalmedicine.org/>

References for "Functional Medicine– A Different Way to Approach Health"

- Shah T et. al. Gene-centric analysis identifies variants associated with interleukin-6 levels and shared pathways with other inflammation markers. *Circ Cardiovasc Genet*. 2013 Apr;6(2):163-70.
- Kinross JM1 et. al. Gut microbiome-host interactions in health and disease. *Genome Med*. 2011 Mar 4;3(3):14.
- Saltzman E, Mogensen KM. Physical and Clinical Assessment of Nutrition Status—Table 3.4. In: *Nutrition in the Prevention and Treatment of Disease* 3rd Edition Coulston AM et. al.
- Jacobs DR1, Tapsell LC. Food synergy: the key to a healthy diet. *Proc Nutr Soc*. 2013 May;72(2):200-6.
- Lucendo AJ et al. Empiric 6-food elimination diet induced and maintained prolonged remission in patients with adult eosinophilic esophagitis: a prospective study on the food cause of the disease. *J Allergy Clin Immunol*. 2013 Mar;131(3):797-804
- Hernandez-Lahoz C et. al. Neurological disorders associated with gluten sensitivity. *Rev Neurol*. 2011 Sep 1;53(5):287-300.
- Keckhagia M et al., "Health Benefits of Probiotics: A Review," *ISRN Nutrition*, 2013 Article ID 481651, 7 pages.

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An Interview with Karl Holtzer, MD By Ronald Glick, MD

Dr. Karl Holtzer recently joined the medical team at the Center for Integrative Medicine as a specialist in Functional Medicine. He practiced primary care pediatrics for 25 years, primarily here in Pittsburgh. He completed a Master's Degree in Functional Nutrition at the University of Bridgeport and is a member of the Institute for Functional Medicine, which is the professional organization for physicians in this field.

How did you get started in medicine and pediatrics? Being a spiritual person, I've always been fascinated with the complexity of the human body and how all of the systems come together. My pediatrician picked up on my interests and he had a strong influence on me over the years. I was surprised, as a pediatric resident, to connect with him when he was still in practice well into his 70s at the time. Over my 25 years in pediatric practice, I loved the connections I made with the children and their families. It was especially rewarding to help in the care of children with chronic illnesses. My only frustration was trying to address my patients' psychosocial needs in only 15 minutes.

What made you decide to move from primary care to focus on nutrition and functional medicine? As a med student, I was a geek and very taken by the body's chemistry. For example, we study this chemical pathway called the Krebs Cycle. Most of my classmates had nightmares, trying to memorize the steps. For me, it helped explain the magic of how our systems make energy. We all have periods of stress when we don't take care of ourselves. When I saw how I was feeling, I realized that for those chemical systems to work, I had to provide the right fuel. Over the last 15 years, I spent more time with my patients and families educating them about nutrition.

This struck home even more when I experienced neurological problems. Genetic testing pointed to metabolic problems that had kept my nerves from healing. I was able to use my understanding of metabolic pathways and vitamins to treat my nutritional imbalances, allowing me to recoup function and minimize the pain I was experiencing. This led me to more formal study, getting a master's degree in nutrition and training with the Institute for Functional Medicine. This combination of advanced knowledge and seeing the impact on my own health has given me a sense of purpose. It has motivated me to share this knowledge beyond my pediatric practice to a wider range of patients with chronic health problems.

What has surprised you most in your functional medicine practice? Functional medicine is a fairly complex system so you'd expect that the treatments would have to be quite involved. I've been surprised to see how often patients come back to see me after making a simple change like using an elimination diet,



reporting dramatic improvement in symptoms. One thing that no longer surprises me is how central a role the gut plays in our health. For patients with a variety of problems, such as fatigue, migraines, or allergies, even if they don't have any GI symptoms per se, if we address gut health, their symptoms commonly improve.

Does functional medicine help for conditions such as diabetes and heart disease? The Institute for Functional Medicine paid attention to a condition called metabolic syndrome, sometimes considered "pre-diabetes", before it became a common consideration in primary care medicine practice. They focused on this because it presents an opportunity to intervene before someone develops the full-blown disease and because of its risk for the development of heart disease. The main treatment approach is lifestyle modification, which fits within the functional medicine model.

What role does testing play? To help direct therapy, commonly it is helpful to have lab tests, which can pinpoint a problem. Considerations include: specialized stool analysis, hormonal assays, vitamin levels, specialized nutritional and metabolic panels, and genetic testing. Common tests, such as thyroid hormones, are covered by insurance, but specialized testing may not be.

A cardiologist uses a stethoscope. How do you make a diagnosis? As with the rest of medicine, diagnosis or understanding of problems is based primarily on the clinical impression. Patients seeking out functional medicine consultation often have complex histories with multiple problems. My initial evaluation takes two hours, which gives me a chance to hear the richness of a patient's story. I review the history of their health issues and other life factors. What's most revealing is when I relate my understanding back at the end. This is to make sure that I understand things correctly and that the formulation resonates with the patient. When I see the patient nodding and sometimes crying, I feel confident that we're on the right track.

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Beginner's Shiatsu – Level 1 (24 hours)

8 Saturday Classes - 11am-2pm

January 23rd – March 19th 2016
(No class on February 20th)

Cost \$400

In this beginner's class, you will learn to give a full Shiatsu treatment to friends and family.

** To Register **

Call or email Kate Sherman

412-965-1303

ShiatsuHealings@gmail.com

Class size is limited;
early registration is suggested!

Course fee must be paid in full
by January 23, 2016.



Food for Life Nutrition & Cooking Classes

This program is brought to you by the Physician's Committee for Responsible Medicine and UPMC Shadyside Center for Integrative Medicine

WHEN: Thursdays (January 7, 14, 21, 28)
@ 6:30pm– 8:00pm

WHERE: UPMC Shadyside
Center for Integrative Medicine,
Shadyside Place, 580 S. Aiken Avenue, Suite 310

COST: \$15 per session OR
\$40 for 4 sessions
– each session includes food samples and a healthy
dessert!

HOW: Reserve your spot today!
Call the Center for Integrative Medicine at
(412) 623-3023

Registration and payment are due by

CLASS TOPICS

Instructor: Janet McKee,
HHC, AADP

Introduction to the Power of Food to Heal

Fresh Juicing and Smoothies

Delicious Dairy and Meat Alternatives

Antioxidants, Phytonutrients and How to Balance
Your Weight Naturally

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GROWING EVIDENCE IN INTEGRATIVE MEDICINE

Help us advance Integrative Medicine through the

P.R.I.M.I.E.R STUDY

PATIENTS **R**ECEIVING **I**NTEGRATIVE **M**EDICINE
INTERVENTIONS **E**FFECTIVENESS **R**EGISTRY

This national study aims to show the important value of Integrative Medicine. If enough people participate in PRIMIER, then evidence will grow, making it possible for treatments to become more widely available.

WE NEED YOUR INPUT

- Survey is all ONLINE
- Seven 10-minute surveys over a 2-year period
- You will receive email reminders when it is time for your next survey
- Free parking for completing first survey

Since its beginning in August 2013, over 2000 integrative medicine patients have contributed information to **PRIMIER**. The list of participating Integrative Medicine Centers nationwide is impressive!

- Alliance Institute for Integrative Medicine, Cincinnati, Ohio
- Boston University, Boston, MA
- University of California San Diego, CA
- University of California San Francisco, CA
- University of Colorado, Denver, CO
- Duke University, Durham, NC
- Penny George Institute for Health and Healing at Abbott Northwestern, Minneapolis, MN
- University of Maryland, Baltimore, MD
- Mount Sinai Beth Israel Center for Health and Healing, NY, NY
- Northwestern University, Evanston, IL
- University of Pittsburgh, Pittsburgh, PA
- Scripps Health, La Jolla, CA
- Thomas Jefferson Medical College, Philadelphia, PA
- Vanderbilt University Medical Center, Nashville, TN
- Venice Family Clinic, Los Angeles, CA
- VA Medical Center, Washington, DC

Help us contribute to this national study. Enrollment information is posted in the CIM waiting room. Please take one at your next visit or ask to speak to a member of the research team for

HEAL Pain Computer Study

Are you starting a NEW treatment for chronic pain?

Would you be willing to answer questions on a computer about healing?

Researchers at the Center for Integrative Medicine are conducting a research study to determine the usefulness of questionnaires about healing for people receiving treatment for chronic pain.

Participants will be asked to complete computer-based surveys regarding their attitudes and opinions about their health and healthcare. Each of three sessions will require 20 - 30 minutes and will take place approximately 6-8 weeks apart. Surveys can be completed at CIM or at any location with internet access.

Who can participate in the HEAL Computer Study?

People with PAIN who receive services at the Center for Integrative Medicine may be eligible to participate if they:

- are starting a NEW treatment for **pain** at the CIM
- expect to continue the treatment with their CIM provider for at least several weeks.
- are willing and able to complete surveys on a computer.

Participants will be paid up to \$90.

To learn more about this research study, please call 412-623-2374 or e-mail healing@upmc.edu

Or, ask to speak to a member of the research team at your next visit!

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2015-16 Lectures and Classes at the UPMC Center for Integrative Medicine
UPMC Employees receive 75 Take a Healthy Step points for attending. All lectures and classes at CIM.

December 2015

Mon. 12/07 – 12/28	2:00 – 3:15	Mindful Yoga (4 classes)	\$50	Deanna Burkett, MA, MS, RYT
Mon. 12/07 – 12/28	5:30 – 6:45	Kripalu Yoga Level I (4 classes)	\$50	Deanna Burkett, MA, MS, RYT
Mon. 12/07	7:00 – 8:15	Monthly Mindfulness Intro.	Free	Greco/Burkett
Wed. 12/2 – 12/16	3:00 – 5:00	Yoga Level II (3 classes)	\$38	Alicja W. Walczak, MS, CRS
Wed. 12/2 – 12/16	5:30 – 7:00	Yoga Level I (3 classes)	\$38	Alicja W. Walczak, MS, CRS

January 2016

Mon. 01/04 – 01/25	2:00 – 3:15	Mindful Yoga (4 classes)	\$50	Deanna Burkett, MA, MS, RYT
Mon. 01/04 – 01/25	5:30 – 6:45	Kripalu Yoga Level I (4 classes)	\$50	Deanna Burkett, MA, MS, RYT
Mon. 01/04	7:00 – 8:15	Monthly Mindfulness Intro.	Free	Greco/Burkett
Wed. 01/06 – 01/27	3:00 – 5:00	Yoga Level I (4 classes)	\$50	Alicja W. Walczak, MS, CRS
Wed. 01/06 – 01/27	5:30 – 7:00	Yoga Level II (4 classes)	\$50	Alicja W. Walczak, MS, CRS
Thurs. 01/07 – 01/28	6:30 – 8:00	Food For Life: Nutrition and Cooking Classes	\$40	Janet McKee, HHC, AADP
Thurs. 01/14	5:30 – 6:30	Tai Chi and Chi Kung Demonstration/Registration	Free	Jesse Prentiss
Thurs. 01/21	5:30 – 6:30	Functional Medicine and Functional Nutrition	Free	Karl R. Holtzer, MD
Thurs. 01/21 – 3/24	5:30 – 6:30	Tai Chi and Chi Kung (10 classes)	\$100	Jesse Prentiss
Sat. 01/23 – 03/19	11:00 – 2:00	Beginner's Shiatsu – Level I (No class Feb. 20th)	\$400	Kate Sherman

February 2016

Mon. 02/01 – 02/29	2:00 – 3:15	Mindful Yoga (5 classes)	\$50	Deanna Burkett, MA, MS, RYT
Mon. 02/01 – 02/29	5:30 – 6:45	Kripalu Yoga Level I (5 classes)	\$50	Deanna Burkett, MA, MS, RYT
Mon. 02/01	7:00 – 8:15	Monthly Mindfulness Intro.	Free	Greco/Burkett
Wed. 2/10 – 3/30	6:30 – 8:30	Mindfulness-Based Stress Reduction	\$300	Greco/Burkett
Thurs. 2/11 – 3/31	6:30 – 8:30	Mindfulness-Based Stress Reduction	\$300	Greco/Burkett
Fri. 02/18	5:30 – 6:30	Prolotherapy Injections to Strengthen Injured Tendons and Ligaments	Free	Ronald Glick, MD
Tues. 02/23 – 4/12	12:00 – 1:45	Mindfulness-Based Anxiety Reduction (8 classes)		Dinnie Goldring, LCSW
Tues. 02/23 – 4/12	2:30 – 4:15	Mindfulness-Based Anxiety Reduction (8 classes)		Dinnie Goldring, LCSW

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