

Functional Medicine: A Science Whose Time Has Come

Many people are finding better health solutions with functional medicine, a new model for how to practice medicine and treat chronic disease.



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By [Catherine Guthrie](#) / [December 2013](#)

A few years ago, Louis Messina was in pain. Despite being on a variety of big-gun drugs to control his psoriatic arthritis, an autoimmune disease that attacks the [joints](#), he still suffered from constant pain and swelling throughout his body. He walked with a limp because his left knee had arthritis-induced tissue damage; the big-toe joint on his right foot was similarly destroyed; and in the mornings, he would awake to find his hands balled up into fists. (They would unclench only after he submerged them in warm water for several minutes.)

“Morning stiffness may sound like a minor problem, but it’s a big thing,” Messina says. “If you can’t open your hands up in the morning, you really can’t do much. You can’t brush your teeth, or wash your face, or shave.”

Nor can you perform surgery. At the time, Messina was in his early 50s and putting in 60 to 80 hours weekly as chief of vascular surgery at the renowned University of California, San Francisco School of Medicine.

“I was quite incapacitated,” he recalls. “It was at the point where I couldn’t really make rounds with the residents in the mornings because I wasn’t able to easily walk up and down the stairs.”

Frustrated and thinking about early retirement, Messina made an appointment with Mark Hyman, MD, the medical director and founder of the UltraWellness Center in Lenox, Mass., and a leading expert in functional medicine. “I had never even heard of functional medicine,” Messina says. “I went on the recommendation of a friend of mine and, frankly, because my wife wanted me to go.”

Hyman took a detailed medical history, asking Messina very specific questions about his diet, lifestyle, early childhood illnesses, stresses, and recent health challenges, which included reflux, [migraines](#), and more. Then he ordered a battery of tests to deepen his understanding of Messina’s overall health. (To get an idea of some of the tests Hyman ordered, see “Basic Tests Used in Functional Medicine” below in the sidebar.)

The results showed a variety of underlying gut problems, such as yeast overgrowth, a leaky gut, and allergies or sensitivities to many foods, including gluten. Tests also revealed low levels of [vitamin D](#) and magnesium; hypothyroidism; and prediabetes.

“He had all kinds of problems,” says Hyman. “But once we treated his poor, inflammatory diet and his underlying gut issues, which generated significant inflammation throughout his body, all of those problems went away.”

For Messina, who up until this point had been offered only surgery or drugs (which cost more than \$30,000 annually and had serious side effects), it was an unprecedented medical experience.

“The rheumatologist that I had been seeing before Dr. Hyman still can’t believe it. She’s never seen anything like it,” he says. “My arthritis, my pain and swelling, it’s all gone. I now go faster on the stairs than my residents.”

Messina's experience, while notably rare in conventional medicine, is actually quite characteristic of functional medicine, an increasingly popular healthcare model. Its claim to fame: seeing the big picture, treating the whole patient, and recognizing and treating the root of disease, as opposed to just the most visible symptoms.

Some folks have the mistaken idea that functional medicine is simply lifestyle-based medicine, but it is a systems-oriented, science-based approach that involves taking a patient's biochemistry, physiology, genetics, and environmental exposures into account when looking for the cause of a specific medical issue or set of symptoms.

Practitioners in the hyperspecialized, overbooked world of conventional medicine, says Hyman, sometimes don't have the time or inclination to adopt this wider perspective. In Messina's case, doctors had focused only on suppressing the inflammation — which was just a symptom — as opposed to digging deep and investigating what was causing that inflammation.

"Most doctors aren't trained to think about the underlying causes of disease, such as toxins, allergens, microbes, nutrition, and stress," says Hyman, who is chairman of the Institute for Functional Medicine (IFM). "Conventional medicine is the medicine of *what* — what disease do you have, what drug should I give you. Functional medicine considers the diagnosis, of course, but it also seeks to answer the question *why*."

[An Epidemic of Chronic Illness](#)

Matching a drug to a disease is a big part of the typical physician's job. It works like this: You get sick. You go to the doctor. The doctor runs tests or recognizes your symptoms. You're given a prescription to take to the drugstore. Sometimes the drug works wonders. Often, it doesn't — particularly over the long haul, and particularly if what you are dealing with is a chronic disease or condition. And often the drug has side effects.

Over the past 70 years, this medication-centered mindset and the industry behind it have saved millions of lives, especially when it comes to infectious diseases, such as malaria and polio.

Conventional medicine is also adept at handling acute trauma. “If you go to the emergency room with a heart attack or a broken leg, the doctors who treat you will know exactly what to do,” says Victor Sierpina, MD, a family physician at the University of Texas Medical Branch whose practice is informed by functional-medicine principles.

Where conventional medicine can fall short, though, is in the early identification and long-term management of chronic illness, including the kinds of digestive, metabolic, hormonal, and cardiovascular disorders in which many functional-medicine doctors specialize.

Conditions like obesity, type 2 [diabetes](#), and cancer are characterized by a series of complex, multilayered symptoms that take years to develop and can affect every biological system, including circulation, immunity, and hormonal and neurological health. By the time most people are diagnosed with a persistent condition, they need a full-scale intervention, not a 15-minute appointment and a symptom-suppressing prescription.

In 2011, the United States spent nearly 18 percent of its total gross domestic product on healthcare. And experts predict the cost of treating chronic illnesses alone could eventually bankrupt the nation.

That belief is based in part on the data: The Centers for Disease Control and Prevention estimates that one in two adults (133 million Americans) has at least one chronic condition such as heart disease, type 2 diabetes, [cancer](#), or arthritis. Chronic illness is now also linked to seven out of every 10 deaths in the United States.

“I came out of conventional medical-school training and was in practice for two years, during which time I’d look at my schedule [at the end of the day] and agonize over the fact that I didn’t help half the people on it,” says David Jones, MD, president of the IFM.

“I was seeing the effects of treating chronic problems with medications meant for acute illness,” he recalls, “and the side effects left many of my patients feeling worse than they did before they saw me. My main treatments at that time were pharmacological and didn’t address the underlying causes of my patients’ real day-to-day issues.”

Most experts acknowledge the current system is failing people with chronic illness. Even James Madara, MD, executive vice president and chief executive officer of the American Medical Association (AMA), agrees that traditional medicine education needs an overhaul.

“The structure of medical-school curriculum hasn’t changed in more than half a century, yet, in the last 25 years, patients’ needs have changed completely,” he says. “Today, for every one person admitted to the hospital, 300 more are seen as outpatients, most with chronic conditions. Caring for this new population requires an entirely different mindset.”

Say, for instance, that you suffer from migraines. An appointment with a typical conventional doctor would likely be brief and end with a prescription for pharmaceuticals.

In contrast, with a functional-medicine practitioner, you fill out an extensive questionnaire about possible triggers of the migraines, including your diet; your digestive and elimination patterns; your sleep and stress levels; and your exercise and lifestyle choices, like smoking and alcohol use. A functional-medicine doc will then order a variety of tests to explore any issues the health history turned up.

“You need to explore what is giving rise to those migraines,” says Hyman.

“Conventional neurologists will diagnose you with a migraine based on your symptoms, but they don’t investigate the causes of those migraines.”

And, there are a variety of causes. For example, explains Hyman, one of his patients had migraines due to bacterial overgrowth in her small intestine. Another patient, who had been to the top headache clinics in the world, turned out to have a simple magnesium deficiency. Another had a gluten sensitivity that triggered her migraines. And yet another patient, who was approaching 40 and always experienced migraines right before her period, turned out to have an estrogen-progesterone imbalance.

Most neurologists don’t have the right model for treating these people, Hyman says, because they are treating only a symptom — pain — and not the root causes. In fact,

many functional-medicine docs believe that drugs used to treat migraines can actually lower your pain threshold over time, resulting in even more uncomfortable headaches.

Jeffrey Bland, PhD, who is widely considered one of functional medicine's leading pioneers, explains it this way: "Functional-medicine practitioners spend time with their patients and listen to their histories because they are looking at the interactions among genetic, environmental, and lifestyle factors that can influence long-term health and complex, chronic disease."

[The Foundations of Functional Medicine](#)

Bland launched the functional-medicine movement about 30 years ago after he grew frustrated with what he calls "fragmented, organ-based specialty care."

Think of disease as a giant weed sprouting out of the body's soil, Bland says. "What's above ground is easier to see and, in many ways, easier to treat. But unless you dig down and uproot the weed, you'll never contain it; you'll only stunt its growth."

In 1990, Bland asked a group of medical experts to brainstorm a better way. Ultimately, the group laid down the foundations of functional medicine. The experts felt that catching the early warning signs of chronic illness would be best for patients as well as the healthcare system. They decided that employing extensive intake questionnaires and listening to patients' stories could provide important clues.

Soon after, Bland and his wife, Susan, founded the IFM and began offering introductory courses in functional medicine. To enroll, an applicant had to be a graduate of an accredited healthcare program: Doctors, nurses, naturopaths, osteopaths, chiropractors, and nutritionists could all participate.

Today, more than 100,000 healthcare practitioners have been introduced to the principles and practices of functional medicine, and the organization's membership is expanding by 30 percent a year. The IFM is developing courses on functional medicine that will be taught in medical schools around the country.

“Functional medicine isn’t ‘airy fairy,’” says Bland. “The method is grounded in science, and we use the best drugs available, if needed,” he says. But, when appropriate, practitioners also advise patients about nutrition, exercise, and reduction of toxic exposure. “This is simply about using the right tool for the right job,” he says.

A Step in a New Direction

The tools that Hyman used to reduce inflammation and heal Louis Messina’s gut (what Hyman refers to as “the inner tube of life”) included supplements to amp up certain nutrients and probiotics in his system; daily meditation practice; and, perhaps most important, a diet that eliminated problem foods, such as gluten, dairy, yeast, and sugar, and prioritized whole foods.

Messina’s daily diet now includes lots of veggies, [healthy fats](#), high-quality proteins, and a variety of anti-inflammatory spices and herbs. He no longer needs medication to treat his arthritis. “I enjoy this way of eating. I immediately took to it because I became aware of how good it made me feel,” Messina says. “I used to have traditional meals, like cereal for breakfast, and I would always have an upset stomach 20 to 30 minutes later.”

A few years ago, Messina was exhausted, in great pain, and on the fast track to early retirement. Today, he is symptom-free, physically fit, and unendingly grateful that functional medicine has allowed him to take charge of his own health.

It is these kinds of turnarounds that fuel the emerging popularity of functional medicine. Sometime in the last 50 years, most physicians lost their ability to see the big picture, which is addressing patient health concerns individually. Today’s conventional focus, says Hyman, is on identifying the disease, naming it, making a diagnosis, then applying drugs and procedures to reduce the symptom profile. Functional medicine turns this entire way of thinking on its head. Instead of seeing patients through the lens of a disease, says Hyman, “functional medicine teaches practitioners how to connect the dots.”