

Interview

A Conversation with Timothy McCall, MD

Interview by Kelly McGonigal, PhD

Editor in Chief

Abstract: *Timothy McCall, MD, is a board-certified internist, the medical editor of Yoga Journal, and the author of two books, Yoga as Medicine: The Yogic Prescription for Health and Healing and Examining Your Doctor: A Patient's Guide to Avoiding Harmful Medical Care. His articles have appeared in dozens of publications, including the New England Journal of Medicine, Journal of the American Medical Association, The Nation, The Boston Globe, The Philadelphia Inquirer, and The Los Angeles Times. Timothy has studied Yoga since 1995 with Patricia Walden, a teacher of classical Iyengar Yoga. More recently, he has been working with Donald Moyer and Rod Stryker. In addition, Timothy travels regularly to India to research Yoga, Yoga therapy, and Ayurveda and to study with a traditional Ayurvedic vaidhya (doctor) in Kerala and a Tantric master in Bangalore. After completing his residency in primary care internal medicine, he practiced for more than 10 years in the Boston area before devoting himself full-time to writing and research. His main focus since the year 2000 has been investigating the therapeutic aspects of Yoga, as well as the scientific explanations of Yoga's effects. In this interview, Dr. McCall (TM) and IJYT Editor-in-Chief Kelly McGonigal, PhD, (KM) discuss what Western medicine can learn from Yoga and Ayurveda, the risks of trying to license Yoga therapists, innovation in the history of Yoga therapy, and the challenges of conducting research on Yoga.*

KM: You travel quite a bit, studying Yoga, Yoga therapy, and Ayurveda around the world. What have you observed in your visits to Yoga therapy clinics in India, and from Yoga therapists working in the West, that Western physicians could learn from?

TM: Yoga has enormous therapeutic potential that, despite recent gains in awareness, is still not being recognized or recommended by most Western physicians. The range of ailments being treated, particularly in India, amazed me. Patients at two different clinics told me of complete remissions from rheumatoid arthritis. Alternate nostril breathing was being taught to some heart bypass patients, leading to smoother post-operative courses and earlier discharges. Children and adults with severe developmental problems were making tremendous strides with Yoga. I was also amazed by how varied their techniques were. Different clinics were

using completely different approaches, yet all seemed to be getting excellent results.

Prior to that trip, I'd focused primarily on alignment-based Hatha Yoga, and that was the focus of the therapeutic work I'd been involved in. At the first center I visited, the alignment—by the standards I'd learned—was not good, but *asana* was only a small part of a comprehensive program that included *pranayama*, meditation, chanting, philosophy, and Karma Yoga. And they seemed to be getting amazing results. I still believe attention to alignment makes *asana* safer and in some instances more therapeutic, but right off the bat, I saw that Yoga therapy goes way beyond well-done *asana*. I was really impressed that at places like the Krishnamacharya Yoga Mandarim, the Iyengar Institute, and Kabir Baug, a large therapy center in Pune, they personalized everything to the individual. It was never, "Here is the protocol for your condition, do this." In modern medicine, we are more

and more trying to standardize care, based on the results of large controlled studies, but holistic systems like Yoga and Ayurveda don't work that way. And this fact poses a challenge to researchers who wish to study them and accurately capture their value.

These holistic systems always look at what's going on with the individual, broadly and in minute detail, and use those observations to tailor the approach. At the Iyengar Institute, they might modify the therapeutic sequence a student in medical classes had been doing, based on what was going on with the student that particular day. What had been appropriate might no longer be appropriate because the student was tired, more stressed than usual, had come down with a cold, or moved into a different stage of their illness. I saw B.K.S. Iyengar sometimes discover that what he'd thought would work, based on his observations and knowledge of the student, didn't work when he had the student try it. As soon as he saw the student in the pose, he'd raise his arms and say, "Come out." If this master, whose powers of observation and ability to come up with personalized therapeutic approaches is legendary, can't accurately determine before the student tries the pose whether it's going to be helpful or not, then how is any preconceived protocol ever going to capture what a good Yoga therapist does?

The very notion of mastery is something that Western medical science doesn't know what to make of. These high-level Yoga therapists and Ayurvedic masters know things, based on years of steeping themselves in the field, going ever-deeper with their personal *sadhanas*, as well as transmission from the lineage of masters who came before them. Some of this can't be verbally communicated. And what can't be captured verbally mostly eludes modern medical science.

One day, B.K.S. Iyengar was working with a man with low back pain who was doing the pose *uttitha trikonasana*. Iyengar had him turn his front foot five degrees in, then five degrees out, and compared the results. Just by watching him, Iyengar knew exactly what was going on with the student's sciatic nerve. No Western physician could do that without an MRI! It used to be that the physical examination and subtle diagnostic techniques were highly valued and stressed in medical education. Not anymore. With more reliance on high-tech tests, the physical examination is considered less important. For the first time ever, medical students are being taught by a generation of professors who themselves never learned to do physical exams, as well as doctors in prior generations. With these observational skills eroding, doctors are in a poor position to really get concepts like the rarified perceptive abilities of master teachers.

KM: Some of these master Yoga teachers and therapists were also self-taught to a large degree, right? The histories I've heard suggest that they developed much of their mastery through years of working with their own practice and working with others.

TM: Sure. Most teachers come out of a lineage, and they vary in how much they stick with and transmit what they were taught and how much they modify and innovate. Iyengar, for example, is an innovator. He studied briefly with Krishnamacharya and clearly got a great foundation, but then went off on his own, practiced eight hours a day, and figured a ton of stuff out. The ancient *rishis* spoke of practices being revealed by listening. I believe that a lot of what Yogis discovered over the millennia is stuff built into our nervous systems, minds, and anatomy. The Yogis found it when they tuned in and then developed techniques to exploit the knowledge. Someone who goes deeply into their practice may rediscover what others have found. I also suspect that innovation in Yoga is probably about as old as Yoga itself. A teacher can help bring you to embodiment and mindfulness, but he cannot control what you will find when you get there.

KM: So how does this process of developing mastery over decades of self-practice, working with masters, and gaining experience translate into training Yoga therapists in the West? And would credentialing or licensing Yoga therapists help or hurt the process?

TM: Part of the problem with licensing and credentialing is that you can have a piece of paper that certifies you, but it may not mean much. It sets a minimum standard for training, and while that has some utility, it will likely sanction some people who may not be that good, or exclude others who are good but who lack some requirement. For example, I had a professor in medical school who was an academic surgeon with prestigious degrees. He was widely published, highly regarded nationally, had every credential in the world. He just happened to not be a good surgeon. Everyone on the staff knew he was dangerous. As a patient, all your research into his credentials was going to lead you to the wrong conclusion about this guy.

We all know there are some people who have little training and are just very good and others with wonderful training who, for whatever reason, aren't great therapists. I don't know how we handle that, and I'm not offering a solution. The Ayurvedic physician I work with in Kerala never went to school. At age four, he started apprenticing with

his father and grandfather, who were themselves masters, and he's probably the most amazing physician of any kind I've ever seen. But the government of India doesn't recognize his training or his mastery, so he has to have a licensed Ayurvedic physician on his staff just so he can see patients. The physician who serves that role at his clinic in Kochi immediately recognized his mastery when he met him and became his student. But that means nothing to the regulators. I've also seen licensing and credentialing in other fields used in political ways to favor some groups and exclude others.

KM: You can't train people to be masters, but you can give people training that could result in mastery. Can you describe what that training might look like in a sentence or two? What sets the stage for mastery, if diligently followed?

TM: It's kind of like being a jazz musician. First you learn your scales really well. You learn how to listen with increasing subtlety. Then you start to improvise.

KM: So what are the Yoga therapy scales?

TM: It depends what kind of students you're dealing with and how sick they are. First of all, you've got to be able to keep your students safe, to avoid contraindicated practices; that's a prerequisite to do Yoga therapy at all. For that, you need knowledge of anatomy, physiology, pathophysiology (the abnormal physiology in various diseases), and some understanding of the medical treatments your patients are undergoing. Another vital requirement to be an effective Yoga therapist is to be a dedicated Yoga practitioner yourself. If you're teaching Yoga to people therapeutically, you need to have a regular practice, where you systematically cultivate your awareness and go deeper into the practices. The ability to see students, I believe, comes directly from your cultivated ability to see yourself. A big issue with licensing and credentialing is that what it takes to be a great Yoga therapist is a lifelong commitment to learning and growth and a steady practice, and no regulating authority will ever be able to control that.

KM: You have also said that intuition is a key skill for a Yoga therapist. Can you say more about this?

TM: First of all, intuition is not like clairvoyance. It's not being psychic. It comes from a deep knowing, some of which may not be verbal but that can be accessed in a holistic way. For example, how do you know when someone is lying? You can feel very clear that someone is lying without knowing how you know. It's similar to psychologist Paul Ekman's

studies on facial microexpressions, which last milliseconds, and may indicate emotions people are trying to conceal. A Buddhist monk and long-term meditator tested at a far higher level of facial pattern recognition than even secret service agents. The monk had cultivated mindfulness to such a degree that he saw a subtlety that most other people, even the experts, miss. When you smooth out your breath, relax your nervous system, quiet your mind, and systematically cultivate mindfulness, and you repeat that steadily for a few decades, you may have access to information unavailable to most people. Of course, good Western physicians also use intuition all the time—they just like to pretend they don't. It sounds too unscientific.

KM: What is your view on how Yoga is evolving in the West?

TM: I think that we have this fanciful notion that Yoga was perfect 3000 years ago or 5000 years ago, and there's this authentic version that's been passed down, and people who don't do it some particular way are violating the canon. We act as if what we're doing is what came down unchanged through the millennia. In reality, a lot of what we're doing as Yoga therapy has been invented in the last 100 years.

Yoga is relatively new in the West—only in its adolescence—so not everything we're doing is good. Some of what we're doing is very good. For example, most Yoga taught in the West has more anatomical precision than what's generally taught in India. I think that's by and large a good thing. In the West, we bring in this idea of doing your personal psychological work, and some of this is a real addition to what's traditionally been done in Yoga. I think one of the reasons many classical Yogis wanted to transcend worldly experience as rapidly as possible is that they didn't have the tools to work through their emotions or neuroses and make that work part of their Yoga practice. But insights from modern psychology, for example, may give us approaches to look at our dysfunctional life situations and make some sense of them, to understand better some of the tricks the mind plays. This process, I believe, can be synergistic with the awareness, self-study, and discipline of Yoga practice.

Some people may take innovation too far—I'm not sure Hot Naked Yoga is an advancement of ancient disciplines. But what I've seen over the years is that people come to Yoga for what might seem to be all the wrong reasons, sometimes get touched by the experience and want to go deeper. I've seen many people who, after a while, move on from a trendy approach to something more profound.

One thing I hear a lot in India is that Yoga in the West is only physical, that there is no spiritual aspect to what we do. I don't believe this at all, but certainly there's more emphasis on Yoga as a workout, particularly in classes taught in health clubs. But it seems to me that if you get people to pay attention to their breath, notice subtleties of what's happening in the body, and do practices that reliably calm the nervous system and turn down the chatter of the mind, it has a spiritual effect, even if neither the teacher or the student comes to it with any spiritual intention. And of course, many traditions and teachers here focus explicitly on the spiritual in their teaching. My primary teacher Patricia Walden certainly does.

Besides the work I've done with her and my ongoing study and practice of Tantra, I've had the chance to sample a broad array of Yoga styles. Because of my medical degree and my position at *Yoga Journal*, I've been allowed to take a variety of high-level trainings in systems that normally restrict access to outsiders. When I hear people who think their Yoga is the only way to do it, I just wish they could see what I have seen. There's healing in every style of Yoga I've examined and depth in places you might not expect to find it. I don't like all systems equally, but I think that there's a lot of great work going on. I think that a lot of us could be more humble about what we're doing and its relative position in the Yoga hierarchy. Recognize that no one has a monopoly on good Yoga. There are many ways to do it, and you can get great results with techniques that are wildly different.

KM: You have pointed out that the future of evidence-based Yoga therapy is limited by the extraordinary cost of high-quality research—and the lack of any organization or company willing to pay for it in the way that drug companies fund drug research. Imagine a world with adequate funding for creative and cutting-edge Yoga research. Would all of your philosophical concerns about whether or not we can study Yoga scientifically go away? Or do you think that there are still fundamental ways scientific research will underestimate or fail to fairly evaluate the benefits of Yoga?

TM: It's mostly the methodology of clinical research of Yoga therapy that concerns me, but whatever flaws it has, the Yoga world is so much better off because of all the work that's being done. The more basic science research is thrilling to me. I love the work that's going on using high-tech brain imaging equipment to document physiological and anatomical findings of long-time practitioners, like the research Richard Davidson is doing at the University of Wisconsin. Luciano Bernardi's study on chanting and its effects on the

autonomic nervous system was brilliant. The neuroplasticity research of the last few decades, while not Yoga research per se, I think is suggesting the primary way that Yoga effects its enormous changes: slowly reshaping the plastic body and mind. I would love to see more investigation of the neuroplastic potential of Yoga.

All the funding in the world, however, won't change the situation with clinical research entirely, unless we change the way we conduct studies. Yoga is holistic, and when you only measure it in reductionist fashion, you're always going to underestimate its true value. Yoga isn't designed to affect single variables or single disease states the way drugs are, but to change practitioners physically, mentally, emotionally, and spiritually, in ways that Yoga believes are deeply interconnected. Yoga appears to make various systems of the body—respiratory, nervous, cardiovascular, immunological, and so on—work better. Single measures like cortisol, cholesterol, and bone mineral density are never going to capture that, though the fact that improvements in each of these measures has been documented in clinical studies is valuable.

The complexity of Yoga makes it a challenge to investigate it using the usual tools of randomized controlled studies. Yoga involves hundreds of different tools that can be combined, modified, and taught in an essentially infinite number of ways, and the patterns of practices may change over time. Yoga therapy has more variables than reductionist science can ever sort out. It's a combinatoric explosion that quickly exceeds the ability of one-at-a-time science to measure. Reductionist science can either ignore the complexity or measure some greatly reduced version of it, for example, reducing the great, beautiful, wide field of Ayurveda to studying tumeric pills for arthritis, regardless of *doshic* imbalance. Or a Yoga study that offers all subjects the same ten poses for back pain, without any consideration of the students' differing postural habits, breathing patterns, state of their nervous systems, stress levels, overall level of fitness, and all the other things that good Yoga therapists routinely assess in developing their recommendations for individuals. And if these greatly diminished versions fail to produce a statistically significant result in eight or 12 weeks, we say Ayurveda or Yoga doesn't work. But slow and steady, personalized and holistic is the way we do it, so I think it's actually pretty impressive how well Yoga tends to do in short-term reductionist studies with standardized protocols.

The study I would love to see would compare a standardized Yoga protocol designed by a master to that same master giving an individualized protocol to each patient,

modified based on how the student responds over time. In other words, let's compare one of these standardized protocols to Yoga therapy as the best Yoga therapists actually practice it in the real world. Let's see which one turns out better. If we did a few studies like that, and they came out the way I think they would, it would give us ammunition for the argument that the way the medical profession is asking us to examine Yoga therapy is flawed and unfair.

On the flip side, studies of drugs and surgery generally optimize every aspect of care. When you're in a prostate cancer study, it's someone like Dr. Patrick Walsh from Johns Hopkins who does your operation, not the guy your HMO would approve. In a drug study, a nurse phones you regularly to make sure you're taking your medications and getting the recommended monitoring tests, all of which are free. This does not happen in the real world. So the way we study conventional treatments makes them look better than they actually are, and the way we study holistic systems makes them look worse than they are. So for us to play this game and not even complain that the deck is stacked against us doesn't seem smart to me. Even with all the money in the world, if we're only going to use it to study standardized protocols based on Western medical diagnoses, we're never going to do Yoga justice. I think it's a testament to the power of Yoga that it does so well in so many studies, given how hamstrung it is by the way reductionist science says it needs to be evaluated. I think we need to find other ways to evaluate holistic approaches.

KM: What about doing outcome-based studies without standardized or oversimplified protocols?

TM: Yes, that's precisely what I suggest. Outcomes-based research that measures results holistically would be much better. It would give teachers the freedom to modify what they are doing based on what they see, not some theory. Western medical scientists don't like this approach as much because if the patients improve, they can't say what the most important factor is. But when you've got people using different *asana*, breathing practices, incorporating philosophical concepts, and using dozens of other Yoga tools that likely have synergistic effects, that may not be a realistic question, nor particularly relevant. In addition, we need to have broad outcome criteria. If you only look at, say, a reduction in back pain as the outcome, you might miss out on other important changes. Someone may come in with back pain and leave with or without back pain, but be happier and more fulfilled in their lives, or have other conditions or symptoms improve. We need to have a way to measure out-

comes broadly enough to capture that. As medical research is currently evaluated, Yoga gets no extra credit for having numerous positive side effects and few risks, and drugs aren't penalized for having side effects that are almost always negative and sometimes deadly.

Although Yoga can help with curing, it's more about healing, and healing is tougher to measure. In medical studies, we're not measuring outcomes that Yoga practitioners believe Yoga has, like fostering the development of equanimity, facilitating personal transformation, and helping people find meaning or forgive people in their lives who may have wronged them. These changes may do more to improve health and well-being than lowering cholesterol or blood pressure. Even with all the research money in the world, some of what Yoga does is ineffable, so I doubt that we're ever going to fully capture it.

We also need longer-term studies because things like Yoga and meditation appear to deepen over the months, years, and even decades. It took that monk tens of thousands of hours of meditation to become so mindful that he could read faces better than the pros. But without a fundamental change in the way we do research, and pay for it, there won't be any long-term Yoga studies. So that's another bias built into so-called evidence-based medicine.

Despite all these concerns, I am still a big believer in Yoga therapy research. Yoga is powerful enough that, even with one hand tied behind its back by the design of the studies, it ends up looking pretty good. Those studies help us promote Yoga to the public, especially to skeptical physicians and health journalists, so there's a lot of utility in them. But I think Yoga is much better than the research to date would suggest. It is perfectly reasonable for us in the Yoga world to both comply with the demand for more research while questioning whether that system is the best, most fair, or the only way to ascertain what's true. By challenging that model, I think we in the Yoga world can help forge a better approach for studying holistic healing that would not only advance Yoga but other traditional healing methods as well. I think that, when you broaden your definition of what constitutes evidence, it's abundantly clear that we should make Yoga a much bigger part of our healthcare system. It has the potential to help millions of people who aren't being reached yet. We shouldn't have to wait until Yoga meets some arbitrary, and largely unattainable, standards of reductionist proof before we move forward.

Direct correspondence to Timothy McCall, MD, at YogaDoctor@gmail.com and to Kelly McGonigal, PhD, at editor@iaiyt.org.