July 2012 Issue | Mark Hyman, MD The UltraWellness Center

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Welcome to *Functional Medicine Update* for July 2012. Well, I'm very excited about this month in that it is a little bit like back to the future. We have the opportunity to visit with a clinician of the month who—I would say arguably—is at the head of his game, top of the class, and has done an incredible job in implementing functional medicine in his practice. I take some vicarious pride in that it was a little over 10 years ago that we had the opportunity to visit with this same clinician as he was moving his practice more and more into the functional medicine milieu, and over those 10 years Dr. Mark Hyman has become a leader in this field and has guided literally hundreds of other clinicians in the successful implementation of the functional medicine concept.

Dr. Mark Hyman: Ten Years of Leadership

I'm very, very pleased that in this ten-year span not only has Dr. Hyman had his career and his impact on patient management grow by exponential bounds, but also his impact on changing health care has started to become much more impactful as well through his work at the level of the executive and congressional branches of our government, and in the area of our armed services and some of the programs that are going to be applied over the years to come with our veterans. In these experiences, Dr. Hyman has started to understand the burden of chronic disease that's rising every day, the challenges that this family of diseases presents to our healthcare system, and some of the resistance there is to change within the system as a consequence of patterns of behavior and systems reimbursement policies. This resistance has retarded the integration of new concepts that would make chronic disease management more effective and efficient.

You're going to hear from Dr. Hyman about his personal journey, which we've all kind of shared in over this last 10 years within the growing and expanding domain of functional medicine, both at the individual practice level and at the societal level as it relates to the changing medical paradigm.

INTERVIEW TRANSCRIPT

Clinician/Researcher of the Month

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Here we are again. I feel like we're all in the living room, sitting in comfortable chairs and we're going to have a fireside chat with him in our Functional Medicine Update Clinician/Researcher/Educator of the Month interview. It's one of my great friends and colleagues. A person who has been a leader in our field for a number of years and continues to provide vision and guidance. I would call him a clinician's clinician: Dr. Mark Hyman.

Mark is a medical doctor who presently is in practice in Lenox, Massachusetts, with a very, very remarkable clinic that serves people with chronic illness across a wide range and spectrum of concerns using the functional medicine model. He's one of the aficionados and primary experts in the functional medicine model. Mark has broad-based interests, talents, and resources. He was a Chinese studies major in undergraduate school at Cornell. He went to China. He learned Chinese. He is involved in all sorts of different disciplines within the healing arts and brought them into primary care and family medicine. He and I met in an early stage of the evolution of the Institute for Functional Medicine. Mark went from student to teacher very rapidly. He integrated these concepts very successfully into his practice, and pioneered new ways of actually applying functional medicine. He was involved in the development of the Textbook of Functional Medicine, and the early days of teaching as faculty within the Applying Functional Medicine in Clinical Practice training program. From there, history has been written. Mark now is the Chairman of the Institute for Functional Medicine. He is a luminary/consultant/resource for all sorts of people who are looking for high-level understanding of the model, and has a list of patients that are extraordinarily grateful for the services that he has provided. We were very appreciative at the Institute for Functional Medicine annual symposium in Scottsdale in late May/early June, that the introduction to the symposium was provided by President Bill Clinton, who happens to be one of Mark's patients. Former President Clinton gave a wonderful salutation to the 850-plus delegates at the symposium, welcoming them and saying how much functional medicine meant to him and his family. Mark also has had a very strong relationship with Secretary of State Hillary Clinton. And he has recently been featured along with Mehmet Oz and Daniel Amen through this extraordinary project they've done at Saddleback Church in Orange County, California, called "The Daniel Plan."[1] So Mark has really been a leader and advocate for changing medicine, both how we do it and what we do in medicine.

Dr. Hyman, welcome to Functional Medicine Update. This is a re-visit for you, having graced us previously as a clinician of the month, but clearly a lot has been happening. You just got back from the Clinton Global Initiative, and lecturing for the second time at the TEDMED conference, and now this Daniel Plan and making it more well-recognized. Tell us how this all swirls about, plus your media tour on your book, and your public television educational series. I mean, that sounds like about four lives right there. Tell us a little bit about how it's going.

Functional Medicine in the National Spotlight: TEDMED, the Clinton Global Initiative, the Daniel Plan
MH: Yes, it is a lot, isn't it? Especially when you put it all together like that! I think: Wow, I don't have

time for anything else. But actually right now I'm sitting out on my deck enjoying the sun. It's a beautiful summer day in the Berkshires, and I'm feeling really happy because at this moment in time there is this huge shift that is happening, and we can see it happening all over, where functional medicine is reaching prime time. It's getting recognition by President Clinton and Secretary Clinton; at the Clinton Global Initiative I spoke about it. It's been put into a mega-church in California with 30,000 members and we're seeking to expand.. People are looking at this as a mainstream solution to our chronic disease epidemic. My book became number one on the New York Times Bestseller List and the PBS show that went with it has been hugely successful because this message is the right message at the right time, and God knows we need a solution because we're in trouble.[2]

Awareness Happens: The Functional Medicine Movement

We look at this whole diabesity issue and the study that came out in Pediatrics a few weeks ago that showed teenagers went from nine to twenty-three percent pre-diabetes or type 2 diabetes from 2000 to 2008, which is frightening. And now we see even 37% of kids (teenagers) have one or more metabolic syndrome risk factors like dyslipidemia, high blood sugar, and hypertension, and they are metabolically obese even though they are thin because they are eating industrial toxic food.[3] This culture, this society, this shift happening—there is an awareness happening—and I think there is a movement starting to brew. We're getting sick and tired of the status quo. When I was at the Clinton Global Initiative, I met with Michelle Obama's director of the Let's Move program and another person who worked for the bipartisan policy center who were very knowledgeable about functional medicine. They were wanting to talk to me about how they can help support the growth of functional medicine, and they want to support the Institute for Functional Medicine's building of a nutrition curriculum for medical schools because that's one of the policy recommendations they made to change this conversation, so it is very, very exciting.

JB: Tell us a little bit…I mean, we all read the extraordinary article that reviewed the experience that you had with Dr. Oz and Dr. Amen with The Daniel Plan. Tell us a little bit about that, because I think there are some deeply embedded truths that are very important as it relates to how we can modify the healthcare system.

How the Daniel Plan Came to Be

MH: Yes. You know, when I think of the tagline for IFM--We Have to Change the Medicine We Do and the Way We Do Medicine--I think the medicine we do has to be germinated off of systems biology in medicine and functional medicine, but the way we do medicine has to change as well, and that's the delivery model. So we couldn't keep doing it in the way we were doing it, and I realized when I went to Haiti that Paul Farmer solved TB and AIDS not by finding medications, or better applications of surgery or interventions, but by using the community as a level to create behavior change, and that the social, economic, and political conditions were driving infectious disease in these countries. I realized that there was a parallel for this in the developed world, which was that the social, economic, and political conditions that exist in America and increasingly even in developing worlds are leading to obesity, and diabetes, and heart disease, and lifestyle-driven diseases, and that we have to deal with that through community-based intervention. I began to noodle on this, and I read a book Chelsea Clinton recommended, a book called Turning the World Upside Down by Nigel Crisp, the former head of the National Health Service.[4] It was basically saying that we have to shift our thinking and put patients and communities at the center of health care, not doctors and hospitals, and that really changing the conversation around chronic disease must be done in order for us to solve this, that's it's not going to happen one-by-one-by-one in the doctor's office but by the tens of millions in communities where people live, and work, and eat, and learn. That's where change happens. And I realized that that's really what

could be done in this country. If we could take the functional medicine model and we could deliver it through small groups and communities, that just maybe something could happen that would show us a different way.

I met Rick Warren and I had this idea and I presented it to him over dinner one night. He said: Yes, let's do it. Because he had baptized 800 people one day, and they were all fat, and after the 500th one he thinks: Man, we're a fat church, and I'm fat, and we need to do something about this. So he was ready for it. We launched the Daniel Plan in January 2011. We had 15,000 people sign up the first week. The plan was basically a functional medicine lifestyle plan delivered through small groups in the community, and we also changed the culture of the church: we changed what was served, we changed the menus and the recipes, we got people active and exercising, so we changed the culture as well. Using that strategy--the small groups, changing the defaults in the community, and driving the right concepts through functional medicine--over the course of a year the church lost about 260,000 lbs. It was remarkable. People got rid of all sorts of chronic illnesses, because as we know in functional medicine, if you deal with the root causes, all of the other diseases go away downstream. People got rid of asthma, and migraines, and autoimmune disease, and irritable bowel, and reflux, as well as obvious things like diabetes and hypertension. People got off insulin (diabetes medication). We really saw that there was this potential for shifting the healthcare system through a wellness model in the faith-based communities.

It's sort of bizarre for me because I'm a Jewish guy from New York so what do I know about evangelical churches, but it was really clear to me that the community had to be the cure and that the group was the medicine. That was the insight that led me to move this forward. As I've been talking about this around the country, it's sort of a lightning rod. People are very excited about it. President Clinton asked me to speak about it at a conference called Health Matters in January and at the Clinton Global Initiative. I gave a talk at TEDMED about it. I think it is really an idea whose time has come—in fact, has to come because we can't solve this on a one-by-one level in the doctor's office. There are just too many patients.

Community-Based Programs May Be the Future of Treating Chronic Illness

JB: It's very interesting. I think you've done such a tremendous job of assembling a wide body of data information across many different disciplines into a very sensible kind of—as my father used to say—"rule of reasonableness" model. It just fulfills a rule of reasonableness. I reflect back to the interview I did a number of years ago on FMU with Dr. Halsted Holman. I know you know him by name if not the person. He's now at Stanford. He's 90-years-young. Still practicing. He is the guy who developed this concept of a community-based program for chronic illness that engaged patients in self-care. He authored that article "The Need for a New Clinical Education" that appeared in JAMA.[5] When I interviewed him on FMU, he talked about the power of small groups, and that people become their own teachers. And they are more effective when they are speaking to one another and guided by a professional than kind of getting lectured to by a professional in the absence of the group. I think you've hit on so many different points of connection: using the neural net as a behavior mod tool in the group process. It almost sounds like the psychobiology of this could be studied as it relates to this social networking approach that you use in the Daniel Plan.

MH: Absolutely. I think we all have a desire to be part of a tribe and a group. EO Wilson talked about this in his new book, The Social Conquest of the Earth.[6] There is a process called group selection. We're hard-wired to connect and link to each other for our survival. I just met a gentleman who is the head of the Center for Compassion Studies at Stanford, which is kind of surprising—he's a neurosurgeon—but

really talking about the biology of compassion, and connection, and this is an underestimated medicine, I would say. Food is medicine, but community is also medicine. Leveraging those two things together is a combination that is uniquely suited to lifestyle disease. What is striking to me is when I review the literature on this (and there is a fair bit of literature), these interventions do work and they work better than conventional care, and they work both in developed and developing worlds. For example, there was a study recently in Health Affairs looking at comparison of lay interventions (lay groups) versus healthcare-professional-led groups for the diabetes prevention program, and there was no difference in outcomes; they both worked equally well.[7] So you don't have to be an expert to even do this. Peer support is adequate. . Even in developing worlds…Peers for Progress is an intervention that has been developed by the American Academy of Family Practice to look at peer-support models in the developing world. They looked at Thailand, Uganda, Cameroon, and South Africa, where diabetes is rampant. They taught villagers simple skills and knowledge, and then they helped them support each other, and through that self support and peer support (not led by a health profession but each other), they had dramatic reductions in their biomarkers: their hemoglobin A1C went from 9 to 6, and they had had better outcomes than any medical intervention, and there was a ten-fold reduction in healthcare costs.[8] So this is a very cost effective and actually more medically effective treatment. It's something that just has not been integrated in any way into medical care, and it's sort of surprising to me. It's like this big "a-ha."

JB: I think it's absolutely fantastic what you are kind of creating here. If we think of functional medicine as built on a systems biology framework or architecture, and that that systems biology has something to do with signals that come in and are translated by the individual into operative functions, which could be things like neuromuscular function, or gastrointestinal function, or cardiac function, that that signal systems biology matrix has never taken into account to the extent that you're having us recognize the signals that come from the social environment, from the social interaction. Yet we know, because there are many published papers that have demonstrated that the singular largest risk factor to cardiovascular disease is a feeling of being impoverished: low attribution, low sense of recognition, low sense of self-esteem, and low locus of control.[9],[10],[11] I think you are codifying, in a systems biology way, how social interaction is a signal so important in health. It's really quite remarkable, Mark—the way you are doing this.

Sociogenomics: How Our Social Connections Influence Gene Expression in Health and Disease

MH: Thank you. Well, you know, some of the insight I have—I've been following you and functional medicine, and I've been sort of focused for so many years on biological networks and really understanding at a very detailed molecular and genomic level what is going on with our biological networks. That's what functional medicine is: an understanding of how those biological networks are the determinants of illness. But I realize that there is another kind of network out there: our social networks. And, in fact, those networks and the social trends that connect us in the end may be more important than the genetic threads. I call this sociogenomics, which is how our social connections influence our gene expression in health and disease. The whole idea of sociogenomics is a very interesting insight for me because it has sort of been a natural flow for me from biological networks to social networks. I have always been involved in groups of different sorts and it is sort of how I live in my own life, but I never applied it to medicine, and now I realize that it actually may be the missing piece that can help really move this whole epidemic along.

JB: With that in mind, let's kind of just take a point/counterpoint view for a second. There is this sense of importance of individualization, or personalization, or what Roger Williams called biochemical

individuality back in the late 40s/early 50s. A person might say: “Well, this sociogenomic model is great except doesn’t it focus on the individual. Doesn’t it tend to regress to the mean of the group and you lose personalization?” How would you respond to that?

MH: I think that’s a fair statement and I think, you know, if you were to look at the basic principles of functional medicine, it’s really the science of creating health. If you understand how to modulate those biological networks to create health, it works for most of the people, most of the time. It will—basically, without treating disease directly—ameliorate or improve or even resolve many conditions, as we found when we did this with 15,000 people in the church. However, there is probably going to be about 20 percent of people who still need extra help. In those cases, you can customize the program. I think you can even customize functional medicine using self-care models. I think this is the next step for functional medicine: creating models of self-care that can be decentralized and democratized, taking the veil back on the sort of secrecy of medicine and guiding people through self-diagnostics, questionnaires, and even self-testing—how they can adjust and modify their own lifestyle and diet and various interventions to help personalize the program. We actually have that as part of the Daniel Plan, so it’s done as a self-care model. And then, of course, if people get stuck, then they have to go see a functional medicine doctor and get that extra level of intervention. It is sort of like if you reboot and restart the system a lot of problems will go away and then you see what you’re left with. I once talked to my friend and he said he has people and he can’t see them because his practice is so busy, and he takes his nurse practitioner and they put them on sort of an elimination diet and sort of basic supplementation, and then 30 days later they check in with them and they do an MSQ and most of their problems are gone and they haven’t even seen a practitioner. And then those who still are stuck, you know, that’s when they need expertise and the skillset of an experienced functional medicine doctor. I would say right now I do tertiary functional medicine. That’s what I do, and it’s people who really have complex chronic diseases and aren’t amenable to simple changes, and that’s fine—I mean, we’ll always have a need for that—but most of the time we can actually create a basic plan and also a customized, personalized model that can be done through self-care.

JB: I know I’m getting into thorny questions but these are the kinds of things that I’m asked very frequently and I’m kind of going to the expert now to re-ask them to you. A person might say: “This is great. I spent 10 years getting training in medicine. I feel like I’m pretty skilled in the art. And now you’re telling me that really I don’t have much use because I can use a paraprofessional and I don’t really need to see these people, so what good is my training and how can I make service?”

Doctors are Trained in Acute Care Rather than Basic Care of People with Everyday Problems

MH: I think, like most doctors who are listening, I went through my training in the hospital and became very skilled at acute care medicine, and was dealing with things in the extreme. And when I went into clinical medicine, it was a big jump. It wasn’t actually what I was trained in. I wasn’t trained in basic simple care of people with everyday problems. So our training is very sophisticated and very skilled and I think that’s always going to be needed, but a lot of what we do is not at the level of our skillset, or training, or knowledge. That’s unfortunate, and I think that can change. And I think doctors should be the ones who are dealing with things that are more complex and require more thinking and more evaluation and diagnostics. There will always be a need for that, but I think a lot of what we do, and particularly in primary care—even in a lot of specialty care—is just not up to what we were trained in, and I think that has to shift. What we are doing, and part of the reason our healthcare costs are so high, is we’re using all these acute care interventions and diagnostics that we were trained in, and we’re using them on things

that aren't acute; we're using them on chronic illnesses. That's where the problem is.

JB: Yes, I think that's very well said. You said a couple of other things, there, that I believe are very important—like hot buttons—and that's diagnosis and disease, which we know are two words that really relate to the sine qua non of how docs are trained: to drive to the diagnosis, to get the definitive disease, and treat the disease as if it were a battle that is going to be won by medical therapeutics. Tell us a little bit of how your model fits into this disease diagnosis frame of reference paradigm.

MH: Your question is how does the diagnostic paradigm fit into this model?

JB: Or kind of juxtapose maybe the two, the way you have described, which I think is a beautiful way of describing a systems biology approach versus this kind of conceptual framework that most of us learn, memorize, and recite on demand, which is this diagnosis/disease model.

MH: We're mixing—or we are confusing—our approach, because we still need sort of a western diagnostic model that we're all trained in, but it's not sufficient to deal with multi-system, complex, multi-genome disorders that are being treated as if they are, you know, sort of the infectious disease, bug/drug model. For example, I had a patient the other day who has hyperaldosteronism. This is because of hypertrophy of her adrenal gland increasing the mineralocorticoids. To me, as a functional medicine doctor, I'm wondering why she's got this. I asked if she's having liquor issues, is she doing other things to trigger this, is this a hyperplasia of the adrenal gland or is it a tumor (an ectopic tumor)? Some things just happen that we don't completely understand that may not be completely amenable to the functional medicine approach. It may need to be cut out—she might have a tumor that needs surgery, she might need some medication to help shut down the aldosterone receptors, like Spironolactone. I think we have to be open to looking at people in the full spectrum of what's going on with them and understand how to distinguish between someone who just needs a hip replacement because her hip is destroyed and someone who needs a retuning of their systems biology.

JB: Yes, I think that's a beautiful model. You've kind of segued over into a very interesting point. I think a lot of our listeners would like to know: what is your practice like? What kind of patients do you have? What are the range of issues that you have to deal with? You've always called you're a "resort doctor"—the doctor of last resort. Tell us a little bit about that.

MH: I'm very excited because we've just moved into a brand new UltraWellness Center. We're 5000 square feet. We've got four doctors, a nurse practitioner, four nutritionists, two nurses (probably three soon), and we do a whole range of care that is everything from optimal health and aging and wellness care, to dealing with very complex chronic illnesses, along the age spectrum from autism to Alzheimer's, from diabetes to depression, from reflux to hormonal disorders and menopause. We do a lot of different chronic illnesses. It's pretty interesting. You never know what's going to walk in the door, but if you just stick your head down and you ask a lot of questions, you can use the matrix and come up with a roadmap even if you've never seen a problem before and begin to understand how to apply this model. That's what is so exciting about it. It doesn't matter what the condition is. My staff often gets asked: Do you treat this, or do you treat that? Yes, I treat everything. If it is something I don't know how to do, like a hip replacement, I'll refer them, but essentially most of the problems will be amenable to functional medicine, and you can know how to start by using the matrix. That's what we do, and it's very, very effective.

JB: Tell us a little bit about the matrix, for those who may be either new to the functional medicine model or just in early in kind of gaining of mastery of it. Tell us what the matrix is and how you find it useful.

Using the Functional Medicine Matrix

MH: This is something that has been evolved over the last 15 years by the faculty and by you and others in functional medicine. It's essentially a one-page sheet that we've summarized the model of functional medicine into, which is understanding how lifestyle factors and how predisposing both genetic and environmental factors influence your biological networks: your genetics, your early childhood influences, your prenatal environment, your early childhood development, stresses, traumas, various things, can trigger imbalances in your biological networks. And so can change in lifestyle, so what you eat, and what you think, and your social relationships and connections, how much you move—all of these things influence your biological networks. So when I see a patient, I want to know how do these factors influence their networks and how are those networks out of balance? There are nodes in your biological network, and those nodes really are the things that make up the matrix, which is your assimilation system, or we used to call it digestion, and how you assimilate and absorb nutrients; your defense and repair, which is how you manage your immune system and inflammation; how you make energy in your mitochondria, and the metabolism of energy in your body and your mitochondrial function; and then how that influences detoxification and biotransformation. And then we have transportation and circulation: how you move around blood and lymph fluid; and then communication, which involves all the cell signaling, and hormones, and our transmitter function; and then finally your structural integrity, which is all the way down from the cell membrane level and even nuclear receptors, all the way up to your biomechanical structure. All those are dynamically interacting all the time. Chronic disease is really a sign of imbalance in these basic nodes in your network, so my job as a doctor is to find out what are the things that triggered these imbalances? As Sidney Baker says: Is there too much of something or not enough of something? Is there too much of a toxin allergen, microbe, stress, poor diet, and not enough of something like good food, and rest, and movement, and sleep, and connection, and love, and meaning, and purpose? All of these things are really the raw materials for creating health. Where we work, mostly, is to restore those systems into balance through using lifestyle, and using nutrients, and using hormones, or sometimes even medication, but it is done with the understanding that we have to work to reset and restore these nodes in the network. When those are working, health happens. It's pretty extraordinary.

JB: I think you said so many extraordinary pearls, there. It's like a string of pearls, basically (a necklace). I want to go back and pick up a couple of them because I think they are very…you say them so easily because you're familiar with them and you are working with them successfully, but for the person that is kind of moving and gaining mastery maybe they need to stop a moment and just kind of take a deep breath—a cerebral oxygenation event—and say: Wow, that's a powerful concept.
Let's go to the term "nodes." I think nodes are really interesting as it relates to the clustering of events, and how there is convergence to certain regulatory command centers in our physiology, and how that relates to things like promoter regions of genes, and regulating assembly and expression of families of genes. It has now become fairly well-recognized that genes don't express themselves one at a time but rather as families that are regulated by these promoter regions that control a cassette of genes that are all interrelated. When you talk about nodes, you're really looking at where the convergence of these lay lines of metabolic control reside. How does a doc do that? Is it from experience and just asking the right questions and being a good listener, listening to the patient's story? Tell us how you gain this mastery.

Remodel Your Medical Paradigm

MH: It's sort of like building a house. It's like remodeling your paradigm (your medical paradigm). Instead of the IC9 codes and specialties, which is the original house structure, we have to remodel into different rooms, which are these basic core nodes in your biological networks that I just mentioned. And everything that happens to a patient in the course of their life gets sort of dumped into one of these areas. It's either an antecedent, a trigger, a mediator, a lifestyle factor, or it's some disturbance in one of these nodes. If someone, for example, has dysbiosis, or Lyme disease, or has mitochondrial dysfunction, or diabetes, these fall into different areas of those nodes, and often they cross over, right? Because diabetes is a mitochondrial dysfunction, it's an inflammatory issue, it's a hormonal problem, it can be related to microbes in the gut and micro-obesity. It can be related to structural integrity related to membrane function and receptors for essential fatty acid composition. So there's a whole series of different things in each node that can relate to any condition, but you can kind of categorize things in a rough way in these areas of the matrix, and then you can begin to see where the patterns lie—where in any particular person their story will sort of highlight. It will come up in bold relief. You don't even have to know what you're doing. I've been doing this for 15 years. I do this with every single patient. I have a detailed questionnaire which ferrets out a lot of these issues that are different than most medical questionnaires, and it's available for free on my website. People can download it. There is a practitioner button and they can get all these forms. Basically it's a way for me to collect data, and then once I collect that data then I categorize the data in these areas, and I can see on this one sheet of paper what things jump into relief. So if there is an immune/gut issue, well that's really clear. If it is more hormonal or toxic or nutritional factors, I can really identify what these are very quickly. And then based on that, I can begin to see: Where do I start? Where do we start with a patient? And you just sort of start to reset those systems. It's something that does take some training, and the Applying Functional Medicine in Clinical Practice and the certification program through IFM are really the pathways to understanding this new paradigm and to remodeling your medical house, so to speak.

JB: Let's first make sure our listeners can find your website: www.drhyman.com. Is that where you would direct them to?

MH: That's right. Yes.

JB: When you kind of boil this down to some of the big things that stick out from your experience, is there a short list of things that you have found that often are "a-has" related to the etiology of these chronic illnesses that produce these disturbances? Are there some things you say: "Wow, I never learned about these in medical school but these appear fairly frequently in the patients that I'm seeing?
Significant Lifestyle Changes Yield Better Results Than Incremental Changes

MH: I think there are a few things that I learned in functional medicine that work a lot. Nothing is going to work all the time for all the patients I have, but there are some few basic homeruns that if you follow these principles you're going to get great results with their patients. One is to work on the gut, and that's understanding it, how it becomes imbalanced, what things can go wrong, and what triggers it. Learning how to identify problems with the gut through a good history, through use of antibiotics, hormones, acid blockers, so forth, anti-inflammatories which can cause gut disturbance, early introduction of foods, for example (dairy, gluten, early antibiotics, early history of allergic or inflammatory disorders). We'll often pick up gut issues. And that's an important area to learn how to fix. And second is food. Elimination diets

are very powerful, and often a hidden cause of many inflammatory and chronic diseases, even obesity, and gluten and dairy are probably the biggest factors. So those things can be enormously impactful when you change diets and see how they impact your patients. And then thirdly, just food as medicine in general. If you do incremental changes you'll often not see much. But if you do significant changes where you get people on a whole real-food diet that is gluten- and dairy-free, low glycemic load with dense phytonutrients, in a week or two you will see dramatic changes in a patient's health. They will see it in themselves and they will know that: "Boy, maybe diet does have something to do with how I feel." And they'll be willing to make those changes. If you do incremental changes, you might not get the results. In fact, I think that has been the key to my success. I build a close relationship with the patient quickly. I get them to engage and be willing to try something. I don't promise them that this is the answer to everything, but I say, "Look, this is something that is easy to do, is short term, the outcomes can be dramatic, and you have nothing to lose." If they buy into that, very quickly they can see that there are significant, significant changes in their health, and that clicks on with them very closely.

The other thing—I think, the big homerun—is really understanding metabolic syndrome, and understanding how to deal with that. It's really truly critical. If we do that, then we can really treat a lot of patients. There are other things like environmental toxins, and mercury, and chronic infections, but those are often the big homeruns in functional medicine.

JB: Let me, if I can, take that down to kind of a retrospective of the last few years of the focus of the Institute for Functional Medicine as indicated at its annual symposia. A couple of years ago at La Costa, the focus was on integrative functional approaches towards oncogenic conditions in the cancer realm. We've seen a focus on a functional medicine approach to autoimmune problems. And most recently (in 2012, now), a fantastic symposium focused on cardiometabolic syndromes. It seems that it's very interesting how this model, as you've described it, can cut across many different disciplines—what we might call medical siloes or areas of specialty. If you were to kind of get into your wonderful Mark Hyman philosophical chair and talk, at 50,000 feet, how is it this model can apply to such divergent states of pathology as cancer, autoimmune disease, and cardiometabolic disease? It seems like these are very different disease families, with different drugs to treat them, and different specialists who know them. How does that work?

MH: It works because at the very heart of systems biology medicine is the idea that most of the diseases that we see are rooted in the same fundamental imbalances, and that if we look at an individual they might manifest as a migraine, or as asthma, or as irritable bowel, or as cancer, or as diabetes, but in the end if you look really down to the root of it, there are disturbances in just a very few key systems. Those are the things we work on: immune system, digestive system, detoxification, energy, hormones, so forth. So these are the things that we really focus on, and if you focus on the root, then the branches take care of themselves. That was sort of the surprise at Saddleback when we did this. You know, it wasn't even with intervention. We just literally created a healthy living program and within a very short time people had dramatic changes in their health that were surprising even to me because we didn't really see them as patients, and as we just got them healthy, diseases went away as a side effect.

JB: I would call this a shifting huge paradigm in this time of great economic challenge to health care. You know, we're still trying to figure out a healthcare system out of a disease-care model, and we're still worrying about reimbursement and universal access, it seems, rather than talking about the type of system that we're going to put money into and provide access to. As you look forward, probably being in a very

unique position having gone to the White House and been in discussion with policy makers about the future of health care, tell us what you see in your crystal ball. Where are we heading and what might we look forward to?

Change in Healthcare Will Come from the Bottom Up

MH: I think it's going to be a tough slog in terms of changing health care from the top down. I think we have to do it because it has to be done and I'll continue to work at it. Maybe we'll come up with some exciting new interventions, for example next week I'm going to New Orleans to work with the VA to create a functional medicine model within the VA in New Orleans because they have decimated their healthcare system, so it's an opportunity to create something from scratch, and using the group model with functional medicine. If we can create a pilot program like that, that shows dramatically increased improvement in outcomes and decreased costs, then maybe we'll catch on. But, it ultimately has to change reimbursement, otherwise things won't change. One of the other things I'm working on is changing the exams in medical education as required to provide teaching to the exams, like the national boards, and if you can change what's on those exams and make it more functional medicine, then the schools will have to change. So those kinds of interventions…there may be a few ninja interventions that could sort of shift the system from the top down. I believe it's got to happen from a grassroots model, and that's why I started at the church. If we create a huge change in the culture—if we change the way people think about their health and we help them understand what functional medicine is for themselves, then they will demand it, then doctors will be asked about it, then schools will want it, and it will shift. That's what I'm hoping we'll do, and so it is really moving multiple levers: education, reimbursement, demonstration projects, and grassroots movements around changing consumers' demands and values.

JB: I think that probably relates to the last question that I will burden you with. You're the leader of the functional medicine movement through the chairmanship of the Institute and being such a celebrated practitioner of this form of systems biology and health care. How do you see functional medicine as both a discipline and as an institute, changing or morphing to address this global increasing burden of chronic disease and trying to make a contribution to it?

MH: Well, the Institute has a five-year strategic plan that's to raise 20 million dollars to expand our educational platform, and to engage in pilot projects and research programs, as well as collaborate with other organizations that can help extend this model, and we're active in all those areas. I'm most excited about building a scalable e-learning platform, which we raised almost $300,000 dollars for at the last functional medicine conference, from our own community, in order to actually get this out there into a medical curriculum that can be used, and a nutrition curriculum, in medical schools and residency and postgraduate education, and it can be scaled internationally. IFM is increasingly being recognized as the leader in that field. Washington policy makers are coming to me saying, "We want to make functional medicine education part of the change that's got to happen in medicine." It's not us going out to try to recruit people to our way of thinking; it's people who have come to it and have now seen the light, and seen the value of it, and see how this needs to be what medicine is, and I'm very encouraged by that.

JB: Well, Mark, I want to tell you how privileged we are to have had this chance to visit with you and how really impressed and truly congratulatory I feel for what you've accomplished and how you have been a lightning rod for the functional medicine concept and the Institute for Functional Medicine. I'm so impressed by its faculty, by the quality of the people, the dedication, the intelligence, the wisdom, and the

tireless work that goes into the Institute from its faculty and staff. I think what you are doing is leading a movement that cuts across a lot of boundaries. It really becomes a system in and of itself that exemplifies systems biology and medicine, so it's living its own model. I want to thank you on behalf of all of our listeners, and all I can say is keep the energy, take good care of yourself, we need leaders like you. I think the 21st century is going to have its challenges, which hopefully this model will provide some assistance in keeping a healthy population available to address the issues that we're going to deal with on a global basis in the environment, social structure, poverty, and others that I think we're going to have to find solutions to. Thank you very, very much.

MH: Thank you, Jeff. It's such a pleasure to be able to do this with you. In fact, how I learned functional medicine was by listening to every single Functional Medicine Update over the years. It has been a huge way for me to stay current and stay engaged and I've probably listened to thousands of hours of you. At first I had to keep hitting rewind until I finally started understanding the language.

JB: Well, I think you not only understand the language, you're creating the language now. That's the sign of a movement when you have really bright, capable, dedicated people picking up the flame. Thanks a million, and we're going to be traveling with you through your next journey. Be well.

MH: Thank you, Jeff. Thank you so much for what you do for all of us.

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