



Article by Mary Ann Iyer, MD, MA

## **Mindbody**

[www.maryanniyer.com](http://www.maryanniyer.com)

If you've ever felt the stress of running late to an appointment, you've experienced the visceral impact of the mindbody connection. Imagine your daughter is next to you in the car, she's the star in the soccer playoffs, and you get stuck at a train crossing. The minutes are ticking by. Physically, you're just sitting in a car. But what's going on in your body?

The influence of beliefs and thoughts on behavior, health and wellbeing has fascinated me for my entire professional life. Early on, as an epidemiologist, I was involved in doing case control studies. In the world of epidemiology it's rare that we find a definite causative agent for an outbreak. So, in order to get to the closest probable cause, we do case control studies. We ask questions trying to ascertain what those who got the disease in an outbreak did more of compared to those who didn't get the disease. Invariably in these two groups of people, some people who did exactly the same thing as the presumptive problem didn't get sick.

I find that fascinating. How is it that some people who are exposed to the same pathogen get sick and some don't? I still remember the case that caught my attention – a very large family involved in an outbreak of *Campylobacter* that was linked with raw milk. Everybody in that family had drunk roughly equal amounts of the raw milk, and some got sick and some didn't. Some individuals – with presumably similar genetics – were not affected by drinking this milk.

This realization opened up a whole new world of inquiry for me. I started focusing on beliefs and mental structures and attitudes as probable influences in the formula of “staying well”. I got my Masters in Psychology to round out my understanding of deeper forces operating in people's health picture. To me, it became apparent that thoughts and beliefs are part of the mix that goes into health and wellbeing.

There are several layers in which our thoughts influence our wellbeing. The first is related to our behavior based on our cultural beliefs.

When I was a state epidemiologist, I helped with an outbreak of tuberculosis that was centered in an Asian community. Every person was presumably doing the right thing. They were picking

up the medication, they were coming to their appointments on time, and yet their x-rays were worsening over time and the outbreak was getting worse.

I decided that we needed to do home visits. We went to the first home, and opened up the cupboard. And there was several years' worth of TB medication lined up on the shelves. It just so happened, in this culture, the belief system is that diseases are classified as hot, warm, and cold. Medications are also classified as hot, warm, and cold and there needs to be a correlation between the disease and the treatment. The color of the TB medication was inconsistent with the correct treatment that needed to be given for this illness according to this belief system. A member of their community was versed in their medical background, and so the patients did the best thing they could under the circumstance. They followed our requests: they showed up, they were polite, they took the medicine from the nurse at the clinic; and then they did the right thing according to their medical provider: they didn't actually swallow the medicine.

Their cultural beliefs were basic to their behavior – which then clearly led to a worsening of a disease.

When I began doing primary care, my understanding of the influence of beliefs on health took an even deeper turn. It didn't take me very long – a few months – before I realized that no matter how much education goes into nutrition, exercise, smoking/not smoking, etc, that there was an enormous disconnect between the cognitive awareness and the behavior. We estimate, right now, that roughly 80% of what ails us, particularly in this culture, has to do with lifestyle choices. The chronic illnesses that would be modulated, or perhaps even prevented in the first place, depend on lifestyle choices. And the decisive factor in our behavior? Our very personal beliefs – which is the second layer of influence of mindbody.

I recall a patient, a woman with newly diagnosed Diabetes Type II, whose blood sugars were out of control. Numerous nutritional counseling sessions led to her getting all the answers right to my questions, but no apparent change in her sugar levels. It was only after a particularly focused session that we got to the bottom of things.<sup>1</sup> Her habits of shopping at the grocery store continued to revolve around what she thought she could afford, based on old mental tapes of poverty. Much of what she purchased were high glycemic foods, in spite of her “knowing better”. Once we brought her husband in to temporarily be in charge of shopping, we were able to break the overarching maladaptive pattern at the base of the problem. Within six months, this woman's blood sugars had normalized and she was well on her way to living new patterns of behavior. Finding and addressing her core operative beliefs was essential to this change.

A third layer of the influence of beliefs on wellbeing has to do with the direct chemical responses of the body to what we are thinking. My opening story reflects this dynamic. Workshop

attendees have said, in response to my question of “What is your body doing while you’re just sitting there in that car?” “My heart is racing.” “Body is tensing”

Heart rate is considered to be governed by the autonomic nervous system, over which we presumably have no control. Yet – just sitting in the car, doing no physical activity – your body is tense and heart is racing. Clearly there is something other than a physical cause for this. The norepinephrine that is pumping out to rev up your body and heart is a response to a message from your brain that is advising you of a problem. The mental pictures create a situation to which your body responds.

A fourth layer of the influence of our beliefs reflects our particular nuances of response to our internal messages. Some individuals tell me they would get angry if stopped at a train. Another person might get afraid. So, here we’re starting to bore down into our unique responses to the same stimulus.

Human beings have the amazing capacity to create perceived danger in our mind based upon our history and associations. So, if we, for example, had a bad event in college with a big burly guy, who had a certain funny look on his face – and then much later in the work environment, we’re seated at our desk, and somebody knocks on our cube, and we turn around and see some vague resemblance to this man, our reptilian brain takes over and we have a profound reaction as if we were in danger. Our “reptilian brain” is another word for the primitive brain – meaning it’s below the neocortical awareness – and it is the main thing that operates in our response to our environment.

We each have our own unique way of reacting when we feel anxious. We have enormous variance in our backgrounds. A lot of our interactions with one another have those kinds of operatives playing out. We usually make decisions before we’ve gotten all the current facts.

I am often asked if it is possible to change this internal wiring. There is a whole body of evidence growing in the scientific literature on this subject.

The simple answer is, “Yes, it CAN be changed” – but not with just talk therapy. I remember seeing a client who told me that she got more out of a short series of mindbody sessions than she had gotten from 25 years of doing Freudian therapy. The thing about talk therapy is that it is designed to find an explanation for our experience. But anything that we do that emblazons the story more deeply in our mind, by continually confirming and affirming it can also keep the pathology going. Once we find the history (if we choose to), we still need to dismantle its grip on our actions.

Mindbody methods help us gain awareness to the sensations that we have associated with certain belief structures. When we find the operative belief in its simplest form and question it – dare to allow that things might be different – we start to have an experience that is also very different. At this point, the overall pattern begins to change. That’s the basis for the field of neuroplasticity.

Neuroplasticity is a recent player on the field of brain research. We understand now that the brain structure can literally change related to positive or negative influences. PTSD (post traumatic stress disorder) is a classic example of a neuronal process which exemplifies the expression, “things that fire together wire together”. I think PTSD is more common than we realize. Some of it is dramatic and some of it is low level. But we all, to some extent, have anxiety and tension in relation to things that we find stressful. And – that at one point was thought to be hard-wired. Well, it turns out that it’s malleable with the right tools.

Hans Selye made the expression, “fight-or-flight response” famous in the ‘70s. You’ve probably heard the phrase. It’s now common lay language. Since then, the entire hypothalamic-pituitary-adrenal cortex axis has been well delineated. There is little doubt any more that perceived stress – the word “perceived” is a key – has an influence on the body. This spawned the notion of the neuro-humoral system, which reflects the awareness that the neuronal system and the hormonal system talk with each other.

Then, scientists discovered that white blood cells have receptor sites for neuronal chemicals. We had just gotten used to the idea that the neuro-humoral system existed. But we considered this system pretty consolidated, and still thought of the immune system as a separate entity doing its thing. There was still the idea that we have all these different parts of our body doing their separate things. It’s not like that at all! The white blood cells are constantly getting messages from the neuronal system, and amazingly, the WBCs create what was initially considered to be only neurochemicals developed by the nervous system. From this, the entire field of psychoneuroimmunology evolved.

Science continues to catch up to our common wisdom: the way we think, what we believe, and our fears and anxieties affect our wellbeing. And they affect it through what are now well documented chemical pathways: hormones, stress reactions, and our immune system. Our sense of wellbeing and the entire internal chemical milieu of our bodies are modulated by our response to perceived stress. In the human creature, the word “perceived” is particularly relevant. It’s relevant to any species, but the human creature has the capacity to perceive danger a little more creatively. We have the enormous capacity for self-reflection – with all its nuances of bringing in the past and embellishing the stories of our lives – for better or for worse.

<sup>1</sup>More about this and other exemplary cases can be found in the book: *Mindful Eating; Mindful Life* by Mary Ann Wallace, MD

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