



# the tree of life

BY JOANNE PIZZINO, MD, MPH MEDICAL CO-EDITOR

## cutting-edge science says body and mind are one unit

**E**very human being knows—in their heart of hearts—that his or her body is inextricably linked to the mind that inhabits it. This makes it somewhat surprising that, over the last 400 years, science has tried to separate these fundamental aspects of ourselves years—ever since philosopher/mathematician René Descartes proposed the division to help satisfy an Inquisition-minded Church.

The good news is that science has finally come around to demonstrating that the mind does not *just* live in the brain, and that the body has a profound influence on what occurs in that three-pound piece of real estate residing in our skulls. Advanced scanning techniques such as functional magnetic resonance imaging (fMRI) and progressive understanding of the “molecules of emotion” such as neuropeptides have opened the door to piecing together the puzzle of bi-directional communication between body and mind. There is still a great deal to learn about how these systems interact, but we now know enough to begin to implement effective therapies to solve conditions previously thought to involve only the body or the mind. Hang on to your hat as the science of the *bodymind* continuum rockets forward.

### PSYCHONEUROIMMUNOLOGY

An explosion of research linking behavior, brain function, and the immune system, called *psychoneuroimmunology*, has unlocked the acknowledged mechanics connecting the mind and body known by ancient healers. Psychoneuroimmunology, a real mouthful of a word, is a relatively new field that helps us join together the bodymind. It was first described by Robert Ader at the University of Rochester in 1975. As the word implies, it studies how the psyche (mind) is connected to both the nervous/hormonal systems and the immune system.

To help simplify the bigger picture of what psychoneuroimmunology research has shown thus far, I like to turn the word around and consider the most basic of concepts. The immune system essentially functions to determine “what is me, and not me.” That

is, it responds to the question: “Is [\_\_\_ fill-in-the-blank] in the best interest of what’s inside my bag of skin, as well as who I think I am and what I am about in the world?” This happens at the speed of light, much more quickly than the several nanoseconds needed for nerve impulse travel. The nervous system is designed to detect and instinctually react to elements of my environment vital to acquiring this best interest, whether food, friend, foe, or even feelings. The psyche, or mind, engaging the newest parts of the brain (pre-frontal cortex) for executive reasoning, can then choose how to react to this information. These three components act seamlessly together, coordinating all bodily systems with the mind. Advanced techniques now let us use pulsed electromagnetic fields and acupuncture to modulate the autonomic nervous system or brain limbic areas to access healing of both body and mind.

### Using Bodymind Understanding to Heal

How might we use this new science to help you heal? As an Integrative Medicine specialist, by definition, I always look at the whole person to answer questions such as:

- Could gut-brain axis interactions link this patient’s irritable bowel syndrome and his anxiety?
- Are allergies what cause another’s brain fog and fatigue?
- What do gluten and blood sugar fluctuations have to do with this patient’s depression and ADD?
- Are heavy metals, mold or other toxins involved in this patient’s Parkinsonism or Alzheimer’s dementia?

Using specialized testing such as the Organic Acids Test and bio-impedance analysis, we can spot how inflammation in the gut is also inflaming the brain, or how a toxic burden is slowing down mitochondria, the cell’s powerhouses. Patients are often as thrilled to get their minds back as they are to be relieved of a chronic illness as we target treatment to the individual’s unique *bodymind* interaction. **h&h**

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