

A presentation was given by Dr. Martha Stark, MD entitled: The Wisdom of the Matrix: Regulation, Balance, and Harmony – At the 14<sup>th</sup> International Symposium on Functional Medicine – 21<sup>st</sup> Century Endocrinology – May 23 – 26, 2007.

I have condensed the presentation to what stood out as highlights to me. The Italics that are added throughout are mine.

#### **Dr. Stark's Bio:**

Martha Stark, MD, a graduate of Harvard Medical School and the Boston Psychoanalytic Institute, is a psychiatrist/psychoanalyst in private practice in Boston, Massachusetts. Dr. Stark is a Clinical Instructor in Psychiatry at Harvard Medical School and a Teaching/Supervising Analyst at the Massachusetts Institute for Psychoanalysis. She also serves on the faculty at the Department of Continuing Education at the Beth Israel Deaconess Medical Center (Harvard Medical School) and the adjunct faculty at the Center for Psychoanalytic Studies at the Massachusetts General Hospital (Harvard Medical School), and she teaches in the continuing education programs at both the Massachusetts School of Professional Psychology and the Smith College School for Social Work. Dr. Stark is the author of three books on psychoanalytic theory and technique, all of which have earned the top rating of 5 stars on amazon.com. Dr. Stark serves on the Board of Directors of both the American Academy of Environmental Medicine and the Environmental Health Research Foundation.

#### **Symptoms: A manifestation of the Wisdom of the Body**

Symptoms are the way the body signals that there is underlying dysfunction and imbalance. They can be adaptive and part of the body's efforts to heal itself. To attempt to suppress these symptoms was likened to putting a lid on a boiling pot of water to keep it from boiling over. A 1988 study found that children with chicken pox whose fevers went untreated had an accelerated rate of recovery. (Mackowiak PA. Fever: blessing or curse? A unifying hypothesis. *Ann Intern Med* 1994;120:1037-40)

#### **The Reductionism of Homeostasis: The Holism of Allostasis**

The holism of allostasis appreciates the adaptive value of compensatory adjustments, even as it recognizes the price the body pays for using them. *Homeostasis* emphasizes *single-point tuning and local adjustment; focusing on a single optimal steady internal state.* *Allostasis* emphasizes *body-wide regulatory changes and multiple adjustments;* it focuses on the *multitude of continuously shifting dynamic balances* and multiple set points resulting from *constantly fluctuating environmental conditions.* *The allostatic model appreciates that the body is a complex, adaptive, nonlinear dynamic system in a constant state of flux.*

#### **Two Important Questions**

Why exactly are the body's regulatory processes and vital functions so intimately connected? And why exactly does imbalance in one element of the functional medicine matrix disturb all the other elements? Answer: The Living Matrix

#### **Ground Regulation System or the Living Matrix**

Albert Szent-Gyorgyi, Hartmut Heine, Albert Pischinger, Robert Becker, and James Oschman have devoted their research efforts to understanding, on a molecular level, the workings of a body-wide information and energy dissemination system variously described as:

- The ground regulation system
- The extra cellular matrix
- The connective tissue matrix
- The living matrix

#### **The Living Matrix**

- Is on a microscopic level, but manifests on a macroscopic level.
  - The "matrix" refers to the dynamic order that extends from the microscopic to the macroscopic.
  - Includes the connective tissue or extra-cellular matrix, the cytoskeleton or cellular matrix. The nuclear matrix and the molecular structures linking these matrices.
  - A continuous network of interdependent living tissue that ensheathes and extends into every cell of the body
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- *Able to disseminate regulatory information and vibratory energy to all the body's cells*

- Responsible for maintaining the constancy of the body's internal environment
- *The health and vitality of the body's cells are entirely dependent upon the health and vitality of the living matrix*
- Dysfunction of the matrix results in molecular disorder and cellular disease
- Consists of connective tissue fibers – structural glycoproteins (collagen and elastin) and cross-linking glycoproteins (fibronectin and laminin) dispersed throughout a ground substance – an amorphous, colloidal gel consisting of large sugar-protein complexes surrounded by organized layers of water.
- The collagenous connective tissue, the interstitial ground substance, and the intimately bound film of water constitute the living matrix within which the flow of life takes place.

### **The Living Matrix: A Liquid Crystal (with semi conductive properties)**

The Living Matrix is a highly ordered array of molecules (water, glycoproteins, and proteoglycans) closely packed and tightly organized in a crystal-like lattice structure. This enables the living matrix to function as a semiconductor of electrons and other subatomic “energetic entities”. It conveys information the way a fiber-optic cable does; it conveys energy the way the wire to a toaster does.

### **Dynamic Memory or Precognitive Consciousness (based on quantum physics)**

- *Stored energetically within every molecule of the living matrix is the history of all the body's interactions.*
- *Entitles that stored information and energy can have memory*
- Braden describes an experiment conducted by Poponin – When DNA was introduced into an evacuated tube, the photons that had remained within were observed to line up in an “ordered” fashion; even when the DNA was removed, the photons remain ordered! DNA had direct influence on the photons. The photons had systemic memory. (Braden G. The Divine Matrix. Carlsbad, CA: Hay House, 1997)
- Schwartz writes about a girl with a “tell-tale heart” – An 8-year-old girl who had received the heart of a murdered 10-year-old girl was able, by way of recounting her nightmares, to provide the evidence necessary to convict the murder. (Schwartz G. The Living Energy Universe. Charlottesville, VA: Hampton Roads Publishing, 1999.)
- Every molecule is associated with a highly organized film of water that stabilizes the molecule's underlying structure
- A collagen strand imprints its structure or energetic signature on the water molecules to which it is bound
- Every such moment of interaction is so “recorded” and accumulates dynamically
- Dynamic memory is an explanatory construct for the ability of a disordered or imbalanced living system to recover its order and balance.

### **Excitability**

*The components of the living matrix are poised to absorb incoming information and energy and to propagate signals. Every element of the excitable medium becomes a source of energy to maintain the propagation. Subtle currents can therefore be transported over long distances without losing their charge.*

### **Maintenance of the Living Matrix**

- Uncongested / nutrient-rich
- Well-oxygenated / alkaline
- Negatively charged / energetically unblocked
- Well-balanced / relaxed
- Unconstricted/ structurally aligned
- Well-hydrated
- A healthy, clear mental field unencumbered by disruptive impressions of psychological trauma and emotional deprivation

*The cells remember; the tissues remember; the body remembers.*

*The goal must be to render conscious all those unconscious memories that have not yet been psychologically processed and integrated.*

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### **Therapeutic Interventions**

Stress that is occasioned by “presence of bad” and “absence of good” require treatment that involve detoxification to decrease “bad” and replenishment to increase “good” in order to recover order and balance and restore regulatory capacity.

### **Stark’s Sand Pile Model**

Stark’s sand pile model focuses on a series of moments over time causes partial collapse and partial recovery, periodic cycles of disruption and repair, until such time as a final critical threshold is reached and the sand pile collapses entirely.

- As grains of sand are being added, the continuously evolving sand pile will maintain its basic cone shape
- Environmental stress will prompt ongoing compensatory micro adjustments, enabling integrity and balance to be preserved
- Eventually the cumulative impact of the additional grains will precipitate a minor avalanche.
- The structure of the sand pile will become partially compromised.
- As more and more grains of sand are being added to the now partially collapsed sand pile, these additional stressors not only will provide the impetus for a partial reorganization, but also will be the means by which such reorganization will take place.
- The partially collapsed sand pile will reconstitute itself and “something new” will emerge, a new order, a regrouping
- Adaptive reconstitution of this new allostatic set point will enable partial recovery of the sand pile’s basic structure and partial reversal of its underlying disorder and dysfunction - but this will be accomplished at the expense of stability and balance.
- *Iterative cycles of partial collapse and then partial recovery, accompanied by ever greater compromise in structure...until some indeterminate point in time when a final critical threshold will be reached and a devastating cataclysmic collapse of the entire sand pile will be triggered.*
- So too with respect to the body:
  - recurrent cycles of partial collapse
  - partial adaptive reconstitution
  - at ever newer allostatic set points
  - and ever higher levels of order and complexity
  - *Until such time as the cumulative impact of stress over time will be such that the entire system (the matrix) will collapse and chronic, progressive, irreversible deterioration in structure and function will ensue – loss of adaptability, loss of resilience, loss of regulatory capacity*