Energy Medicine: The Scientific Basis
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Review

Oschman presents several views of the living matrix. In Saint-Gyorgyi's semiconductor network model, molecules form an energy continuum along which electricity can travel. The surrounding organized layer of water can serve as a separate communication and energy channel and may also have an impedance-matching role. Becker's view is that the nervous system has two parts--the classical all-or-none (hence, "digital") system and another system involving the connective tissue (perineurium) that surrounds the nerve fibers. While the classical system is point-to-point and provides high speed, high volume information transfer, the perineural system is analog, operates on direct current (DC), is more like a broadcast system, and is more ancient from an evolutionary standpoint. It sets up a low voltage current that controls injury repair. Oscillations of the DC field, called brainwaves, direct the overall operation of the nervous system and may regulate consciousness. Through the Hall effect, it has been learned that the perineural system is sensitive to magnetic fields and that semiconduction is occurring. This discovery confirmed Saint-Gyorgyi's suggestion of semiconduction in the living matrix and gave a basis for the use of magnets and biomagnetic fields in healing. Oschman also presents facts that corroborate the existence of the perineural system. First, one-celled animals that have no nerves nonetheless have a primitive regulatory system by which they react to external stimuli. In addition, he notes Manaka's findings that various highly-effective Oriental medicine treatments have no effect on the nervous system. Finally, he points out the observed increase in Hall voltage during recovery from anesthesia, indicating that the semiconducting DC current correlates with the level of Consciousness.

Another viewpoint discussed is Frohlich' biological coherence model, which maintains that all parts of the living matrix create vibrations that propagate within an organism and radiate into the environment at different frequencies, including visible light. Each molecule, cell, tissue, and organ has a resonant frequency that coordinates its activities. Living matter is highly sensitive to the information conveyed by these signals. These signals may integrate processes such as growth, defense, injury repair, and the function of the organism as a whole.

Ingber has shown how tissue, cellular, and nuclear architecture can be described as tensegrity systems--an architectural and energy concept developed by R. Buckminster Fuller and characterized by a continuous tensorial network (tendons) supported by a discontinuous set of compressive elements (struts). When mechanical energy is applied to one part of this vibratory continuum, it flows to all other parts as an elastic shock wave. This helps the body absorb impacts without being damaged, particularly if it is flexible and balanced. The mechanism of Pierta and Coffey involves complex harmonic cellular vibrations. In their model, the tissue tensegrity matrix acts as a coupled harmonic oscillator that transduces signals from the cell periphery to the nucleus and ultimately to the DNA. These models support Oschman's own hypotheses that the body is a liquid

crystal under tension and that the semiconductor electronic network includes the acupuncture meridians and extends into individual cells and nuclei.