

MATRIX ENERGETICS AND REGENERATION

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ABSTRACT

Energy medicine involves the diagnostic and therapeutic implications of the various forms of energy that are used by the human body to regulate living processes, such as healing. For example, an injury results in an electrical wave called the injury potential that triggers healing and regeneration; and a number of modern therapeutic devices introduce comparable electric waves that stimulate natural tissue repair processes. The public is attracted to these methods because they are often capable of resolving medical issues that are difficult to diagnose or treat by other means; and the techniques have few if any side effects. The science behind these technologies is both fascinating and revealing.

One aspect involves the energetics of the “living matrix”, which is the largest organ system in the human body. It consists of the extracellular matrix, i.e. the connective tissues and myofascial systems, and their extensions into the cytoskeleton and nuclear matrix of every cell in the body. Hence the living matrix forms a continuous physical system reaching into every nook and cranny of the body. Neurons, skin, the intestinal lining, capillary walls, arteries, immune cells, and even DNA are all components of this matrix. As a whole-body substrate for chemical, electronic, and mechanical signaling, the quality of the living matrix is a major factor in health and longevity.

Energy medicine technologies are now making it possible to interrogate the entire matrix and to detect and correct imbalances, which are often located a distance from regions that show symptoms. Of particular importance is the ability to locate and resolve small pockets of chronic inflammation. Current biomedical research is pointing to inflammation as the culprit behind almost every modern chronic illness, including the diseases of aging. Optimum health, vitality and longevity depend on maintaining the structural and functional integrity of our internal energetic systems.

Key Words: connective tissue, longevity, energy medicine, frequency, spontaneous healing, inflammation, living matrix.

INTRODUCTION

Until recently, western medical science has focused primarily on biochemical and pharmacological approaches to health, disease, and healing. Pharmaceutical and nutritional medicines have been so engaging and successful that energetic aspects of living systems took a back seat. This is changing rapidly because the health care consumer is discovering a variety of successful treatment methods that fall under the broad category of energy medicine. This includes devices such as Ondamed (Figure 1), which can quickly scan the body with biofeedback, jump-start healing, and improve body functions. These technologies are remarkable for their ability to detect and correct clinical issues that are elusive with standard medical diagnostics and that have therefore been difficult to treat. When used on the healthy patient, these methods have powerful preventive effects. The implications for therapeutics, aging, and longevity are obvious.



Figure 1. The Ondamed device.

ENERGY MEDICINE

Energy medicine is defined as the diagnostic and therapeutic use of energy, whether produced by or detected by a medical device or by the human body. Energy medicine recognizes that the human body utilizes various forms of energy for the communications involved in important physiological regulations. Energy medicine also recognizes that optimum health, vitality, and longevity depend on maintaining the structural and functional integrity of these energetic systems. Energy medicine devices employ impulses of particular frequencies and intensities and wave shapes that stimulate tissue repair. We are referring to the familiar forms of energy:

- Heat
- Light
- Sound
- Gravity
- Pressure
- Vibration
- Electricity
- Magnetism
- Chemical energy
- Electromagnetism

The study of each of these forms of energy in relation to living systems poses interesting technological challenges, and much research has been done to meet these challenges. For example, recent research has explored the role of waves of electricity that flow away from a site of injury. This is known as the injury potential. The injury potential triggers the migration of immune and skin cells that protect the body from infection, remove debris, and regenerate damaged tissue^{2, 3} A recent review published in the *New England Journal of Medicine* summarized evidence that both electrical and chemical gradients can guide cell movements using common signaling pathways within the cells.⁴

Spontaneous healing or remission is of particular interest in relation to aging and longevity. A fascinating review of the world literature on this topic is being undertaken at the Institute of Noetic Sciences.⁵ Particular interest is given to studies in which there is adequate documentation in the form of X-rays, MRI, CAT scans, histology, and so on. In his best selling book entitled *Spontaneous Healing*, Andrew Weil points out that very seriously ill or injured patients sometimes undergo a sudden whole-body shift in which their symptoms or injuries appear to vanish. In some cases, tissues repair is not immediate, but is far faster than expected on the basis of past experience.⁶ While rare, instances of spontaneous remission are sufficiently well documented that some physicians think it is worthwhile to find out just exactly what triggers spontaneous healing so that the process can be activated when needed. Weil's conclusion:

All of the circuitry and machinery is there; the problem is simply to discover how to turn on the right switches to activate the process.

THE LIVING MATRIX

In my presentation at A4M's Annual Winter Conference 2006 in Las Vegas, I mentioned a friend who recovered from a cancer that is usually fatal. Her remission seemed to be associated with a single event, a single moment, lasting but a few seconds, when a sort of shudder went through her whole body. When it happened, she knew her cancer was gone, and her oncologist confirmed that it was.

What might this kind of whole-person phenomenon be all about? I believe the switches referred to by Andrew Weil are in the system known as the living matrix. This is a continuous physical network reaching into every part of the body. While this "organ of form" has not attracted the same attention in biomedical research circles as other major systems, such as the nervous, circulatory, reproductive, digestive, immune, and other systems, the living matrix is actually the fundamental material that forms all of the systems, organs, tissues, and cells in the body. The living matrix concept, as developed by the author, became a reality with the discovery that molecules called integrins traverse cell surfaces, joining the cytoskeleton of every cell with the

extracellular or connective tissue matrix.^{7, 8} Deep inside every cell, the cytoskeleton also connects to the nuclear matrix and to the genome.⁹

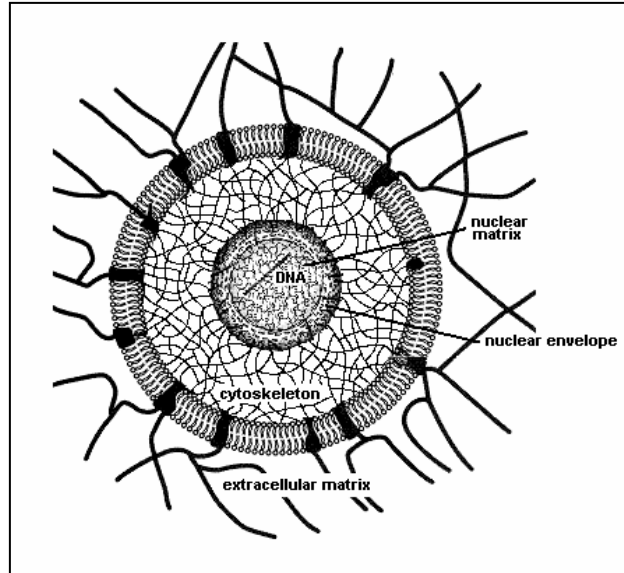


Figure 2. A cell and its surroundings.

Figure 2 shows a cell and its surroundings. Note the nuclear matrix within the cytoplasmic matrix within the extracellular matrix. Molecular biologists have described the thousands of different molecules comprising this matrix system. A prominent scientist from Johns Hopkins University School of Medicine in Baltimore, Donald Coffee, and his colleague, KJ Pienta, wrote about this system:

*Cells and intracellular elements are capable of vibrating in a dynamic manner with complex harmonics, the frequency of which can now be measured and analyzed in a quantitative manner ...These vibrations can be altered by growth factors and the process of carcinogenesis ...a tissue matrix system consisting of the nuclear matrix, the cytoskeleton, and the extracellular matrix...is poised to couple the biological oscillations of the cell from the peripheral membrane to the DNA...*¹⁰

Fascinating research from Donald Ingber and his colleagues at Harvard Medical School shows that tensions in the matrix are as significant as chemical factors in regulating cellular activities.¹¹ And the research summarized above indicates the significance of electrical factors. Taken together, the matrix and its energetic properties probably correspond to the circuitry *and* machinery Weil described in his book.

While we usually think of physiological regulatory processes in terms of molecular signaling, based on the diffusion of substances such as hormones and neuropeptides, there are indications that much faster regulatory processes have to be taking place. Fascinating research has described high-speed processes that characterize athletic and other kinds of performances.¹² One of the most prominent scientists to point this out was Albert Szent-Györgyi, who received the Nobel Prize in 1937 for the synthesis of Vitamin C. He observed that living processes are too rapid and subtle to be explained only by slow moving chemical reactions and nerve impulses.¹³ To account for the speed and subtlety of living processes, he described in detail how the double bonds in the backbone of protein molecules contribute free or mobile or delocalized electrons that can move extremely rapidly throughout the body. He viewed the protein fabric as the “circuitry” that conducts mobile electrons and protons. A key discovery was that the proteins are actually semiconductors. Migration of electrons can take place within the matrix far faster than the random diffusion of chemicals and nerve conduction that is measured in meters per second. Signaling with electronic and electromagnetic signals can be virtually instantaneous.

Until recently, these ideas have had little experimental support and even less impact in the fields of physiology and biomedicine. This has changed, however, because the reality of the semiconducting nature of proteins and other components of the matrix is providing the basis for a nanoelectronics industry, which is producing molecular and atomic circuitry.^{14, 15} In other words, an entire global industry is turning to biology for inspiration in miniaturization of electronic devices.

ENERGY MEDICINE AND INFLAMMATION

A related aspect of energy medicine is the growing consensus in the medical community that most if not all chronic diseases and disorders are actually the result of inflammatory responses that have, in a sense, outlived their usefulness. In other words, inflammation seems to play a role in a wide range of diseases not previously considered inflammatory. Biomedical researchers have become fascinated with this concept, as evidenced by ongoing research that has confirmed a role for inflammation in aging,¹⁶ Alzheimer's disease,¹⁷ asthma,¹⁸ atherosclerosis,¹⁹ bowel disorder,²⁰ cancer,²¹ cystic fibrosis,²² diabetes,²³ meningitis,²⁴ multiple sclerosis,²⁵ osteoporosis,²⁶ prostate cancer,²⁷ psoriasis,²⁸ and rheumatoid arthritis.²⁹ The above references are examples from the 2006 literature alone – an indication that this is now one of the most active areas in clinical research. The implications have reached the public, as evidenced by the cover story in Time Magazine February 24, 2004 entitled *The Secret Killer: the surprising link between inflammation and heart attacks, cancer, Alzheimer's and other diseases*.

Inflammation is defined as, "a localized protective response in trauma or microbial invasion that destroys, dilutes, or walls-off the injurious agent and the injured tissue."³⁰ Inflammation can be confined to tiny "inflammatory pockets" as described by the famous stress researcher, Hans Selye.³¹ This is called "silent inflammation" because the inflamed site is not painful, and may go unnoticed, even though it is causing problems elsewhere in the body.³² This can happen because of leakage of free radicals into surrounding tissues, where they damage normal cells. Even more significant may be the leakage of toxic materials that arise within inflammatory pockets because of necrotic tissue breakdown. Selye and others have obtained evidence that such substances can leak into the blood and lymphatic circulation, producing slow but progressive atrophy in various organs a distance from the original site of trauma. This hypothesis explains how focal pockets of inflammation can trigger a diversity of chronic diseases and disturbances, many of which frustrate the physician, who is challenged to locate the cause.

The reason we must now re-examine Szent-Györgyi's ideas about semiconduction of electrons in the body is that the electron is obviously the most potent antioxidant. Inflammation is an energetic syndrome as it is characterized by the presence of free radicals, which are highly

reactive molecules that are missing one or more electrons. Free radicals destroy bacteria and cellular debris by violently tearing electrons from them to satisfy the need to fill their molecular orbitals with paired electrons.

Because inflammation is an energetic phenomenon, energy medicine technologies can interrogate the living matrix energetically and locate small but significant areas that are causing problems, and introduce energetic signals that can restore balance or neutralize free radicals. The use of devices such as Ondamed can greatly enhance the confidence of both the physician and the patient by revealing and treating subtle issues that otherwise might never be located or even suspected.

CONCLUSION

Optimum health, vitality and longevity depend on maintaining the structural and functional integrity of our internal energetic systems.

ABOUT THE AUTHOR

James L. Oschman, PhD is the President of Nature's Own Research Association, and is a leading authority on the science behind a wide variety of energy medicine therapies. He has a BS degree in biophysics and a Doctoral degree in biology from the University of Pittsburgh. He has worked in major research labs around the world, and his scientific papers have been published in the world's leading journals. Jim is also the author of *Energy Medicine: The Scientific Basis*, published by Churchill Livingstone. This book gives the most ardent skeptic a logical and scientifically sound basis for a variety of therapies. Elsevier Health Sciences published Jim's second book, *Energy Medicine in Therapeutics and Human Performance*. This research provides new insights into the ways the body can function in peak athletic or artistic performances and in profound therapeutic encounters. Jim's research has led to useful insights that can help all health care professionals better understand and advance their work and explain it to others. He has also become involved in the development of cutting-edge medical devices and other applications of the emerging concepts of energy medicine. Jim is a member of the Scientific Advisory Board for

the National Foundation for Alternative Medicine, and is the recipient of their Founders Award. He has also received a Distinguished Service Award from the Rolf Institute. You can learn more about his work on his website: <http://www.energyresearch.us/>

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