

Biophotons as Subtle Energy Carriers

Introduction

Subtle energy research in Qi and prana is leading us into myriad labyrinths of scientific trails. Qi, the Chinese energy equivalent of Prana, is measured in acupuncture systems and its flow is directed for promoting health. We even know some of the channels through which Qi energy seems to flow. The channels are called Bonghan system, seen in some parts of the body.^[1] Still, we are not sure what kind of physical energy flows through these ducts; is it electromagnetic or some particles that roll through these interlinking systems of channels? Although scientists have postulated laser-like electromagnetic radiations flowing through these links, it is still early to say if this is indeed the case in all acupuncture meridians.

In the tangible domain, two subtle energy carriers come to mind: biophotons and bioelectrons. Biophotons are photons (light particles) that are generated within the body, and these could be measured as they emanate from the skin. Similarly, bioelectrons are available from within the body; these are measured in instruments such as electro-photonic imaging. This aspect will be taken in a later presentation.

Biophotons

Bioluminescence is produced in living organisms such as fireflies and this should not be confused with biophotons. Bioluminescence is produced due to the presence of specific biochemicals in these organisms. The vivid colors emanating from these organisms are for attracting a prey or for species propagation. These biochemicals are not available in all organisms (for example, not in humans). Hence, bioluminescence is observed only in some species. Biophotons, however, are light particles that are generated within the body and are constantly radiated from the body surface. These spontaneous emissions are thought to be associated with generation of free radicals due to energy metabolic processes.^[2,3] Since these dynamic metabolic processes are common to most living systems, it is likely all living beings give rise to biophotons. Further, these light emissions are extremely weak and hence cannot be observed by the naked eye. Detections of biophotons need special photon counters which are sensitive to pick up even a single photon in the environment.

In one experiment, photomultiplier tubes were used along with a charge-coupled camera.^[3] Any stress to the skin in the form of exposure to ultraviolet radiation or cigarette smoke enhances the emission of biophotons while topical application of ascorbic acid or antioxidant solutions reduces such radiation. It is thought that studies of spontaneous ultraweak photon emission could be used for assessing

aging in humans as well as for determining oxidative processes in humans.^[3]

It is known further, that after practice of meditation, biophoton emissions from the body decrease; this could be due to reduced free radicals in meditating subjects.^[4] Communication and control are two required activities within and between cells to maintain homeostasis. Normally, it is thought that both these functions are achieved through biochemical and neurological means. The coherent light source is now thought to be another arm through which both control and communication are achieved. This may be true especially in long-range communications in the body.^[5]

Coherent biophotons as a control signal are proposed in acupuncture theory also.^[6] Coherence is a property when the phases of the signals are related precisely as in a laser which gives the laser beam its unique properties. It is tempting at this point to think of biophotons as equivalent to Qi energy as modeled in Traditional Chinese Medicine or to prana in Ayurveda and Yoga. However, it is too early to draw this conclusion. Perhaps, there is a dynamic exchange between Qi/prana and biophotons; the photons in the body in their turn, take part in biocommunication and signaling. Since biophotons are a result of oxidative processes also, there could be complex interrelation between oxidative processes, biophotons, and Qi energy.

Conclusion

As early as in 1923, Gurwitsch, a Russian scientist, observed optical radiation during mitosis in onion roots and called it mitogenetic radiation. Modern biofield theory has extended this hypothesis to postulate electromagnetic interactions between cells for control and for information transfer. These have been called “nonchemical, noncontact cell-to-cell communication.”^[7] Action at a distance was introduced in physics more than 150 years ago when Maxwell derived his famous electromagnetic equations. Now, the notion of action at a distance has permeated biophysics also conferring possibilities and problems in living systems that are more difficult to locate and measure.

It is known that oxidative stress is harbinger of many metabolic syndrome disorders.^[8] This also seems to contribute to aging and related degeneration in the body. Hence, measuring metabolic syndrome through a consistent method is of importance. It is likely that biophoton emission is a fundamental process and its measurement could portend a stable method; however, measurement method itself is expensive and complex. It is possible that the photon measurements could be substituted or complemented with electron availability in the biosystems.

This could become an easy and noninvasive method of measuring oxidative process in the body. This aspect will be taken up later.

While the problems of aging and oxidative stress are inherent in any living system, it is also possible to reverse these processes through practice of Yogaasanas and meditation. Work is also emerging in this area; if life style confers these problems obviously changing lifestyle and reversing and mitigating these degenerative processes is also possible.

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