Electrons in Biology

Introduction

Electrons are one of the fundamental particles postulated in physics and one of the early evolutes after the big bang, when universe started to expand and evolve into galaxies and star systems. Electrons exist in all matter, both as bound electrons and as free electrons. In biological systems, electrons play an important role in oxidation-reduction reactions.[1] In this small book, Szent–Gyorgyi has argued that a biologist deals normally with three levels of living systems, namely, macroscopic, microscopic, and molecular levels. The last and the most important level is the most subtle too and is the electronic level. At this level, we look for electronic exchanges that take place at the subatomic plane. Electronic configurations at this level provide many faceted properties to the cells. He recalls his ideas in this area as follows: “The main actors of life had to be electrons whereas the clumsy and unreactive protein molecules had to be the stage on which the drama of life was enacted” (1, p. 5). This fascinating and insightful statement made in the early part of last century was received with scepticism; in fact, it presupposed many later discoveries and was thus much ahead of its time. He goes on to state that “Taking out electrons irreversibly is killing” (1, p. 18).

The above narration by a leading scientist provides a basis for investigating electron transfer mechanism in biology. For life to emerge, certain conditions are required one of them being maintenance of low entropy (increasing negentropy). It should be noted that increase in entropy signifies increased disorder in a system, while the term negentropy signifies a measure of order. The system should be able to absorb energy from the environment and provide a negentropic milieu for sustenance of life processes. It is said that in the energy cycle within an organism, electrons are passed from hydrocarbons to oxygen.[2] This energy cycle is the driving mechanism for maintaining life processes in cells.

At present, a great deal work is taking place on redox imbalances in the body. Redox is a chemical reaction in which the oxidation states of atoms are changed. We know, for example, that oxidation (losing an electron) of a biomolecule could result in many health problems. Further, reactive oxygen species along with reactive nitrogen species are considered as one of the major contributing factors for oncogenesis or cancer production. It is said that “Oxidative stress induces a cellular redox imbalance which has been found to be present in various cancer cells compared with normal cells; the redox imbalance thus may be related to oncogenic stimulation.”[3] Further, it is observed that unremitting inflammation is one of the basic problems related to acute as well as chronic diseases. Research in this area suggests that effects of inflammation could be reduced through earthing the body.[4] This is a simple procedure, connecting the body to the ground which is a rich source of electrons. On grounding the body, electrons find an easy path to enter the body and perhaps able to neutralize the oxidative stress.

Water is a major electron provider inside the body and let us reviews what has been reported so far in the role of water in health and disease.

Water has a major role to play in all living systems. In the body, liquid water seems to display as charged particles and coherent domains (CD) are established through trapping of specific electromagnetic frequencies. The electromagnetic fields could be endogenous fields (available within the body) or from exogenous sources. These fields seem to organize water molecules into coherence and trap information (in the form of electromagnetic signal) within the water molecules.[5] These signals provide resonance interactions with proteins and other molecules thus orchestrating growth, control, and death of molecules in the body. This is an exciting model, and many phenomena such as homeopathic drug interaction and some healing methods could be explained through this model.

Interaction of the electromagnetic fields (including light) with water generates specific reorganization within water molecules producing CD. These domains in water are able to interact with each other and provide free electrons to the medium. Further, photosynthesis also takes place due to these domains and this as we know is essential for providing food to the entire living system as well as trapping carbon dioxide from environment reducing green house gases.

Conclusion

Water gives rise to electrons, and the latter provides life to be sustained at cellular level; meditation seems to reduce electron availability outside the body as seen in electro-photonic imaging studies.[6] In this system, electrons are drawn out of the finger pads; the finger pads are divided into sectors connecting them to various organs of the body as per acupuncture theory. The amount, intensity, and uniformity of electron emission are recorded and calculated. The reduction in electron availability as measured by this system seems an unexpected outcome of meditation. However, it is noted that during meditation, availability of biophotons is also reduced. It is likely that electrons and photons have similar role to play in maintaining homeostasis. We also know that biophoton emission from the body is reduced when free radical formation reduces. If a direct relation between electron availability and biophoton
expression is established, then bioelectron monitoring could be the preferred method since it is a much easier to measure electrons available in the body.

It is seen that health indices improve through meditative procedures. In Upanishads, it is mentioned that inside the body, water splits into three components; the most subtle is responsible for maintaining prana in a person which is thought to be vital for health maintenance. Lack of prana is death, as Ayurveda also postulates. A dying person normally craves for water; what the person really needs is prana that is embedded in water! Given all these fascinating aspects, the role of water in health and that of electrons in health maintenance are of great interest.

TM Srinivasan
Division of Yoga and Physical Sciences, Swami Vivekananda Yoga Anusandhana Samsthana, Bengaluru, Karnataka, India
E-mail: editor@ijoy.org.in

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