Part One

Bioelectric and Bio electromagnetic Fundamental Principles of Living Cells

Ali Alishahi

Researcher and Founder of Vadelayman Ali Scientific Institute of Cellular Balance

Austria

Abstract: Bioelectric and bio electromagnetic activities of living cells are based on five fundamental principles:

1 – Balance of bio electric and bio electromagnetic fields in chromosomes
2 – Balance of bio electric charges in cellular membrane
3 - Balance of bio electric and bio electromagnetic fields in cellular channels
4 - Balance of bio electromagnetic fields in cellular poles
5 - Battery capacity and cell's capability in energy distribution inside the cell

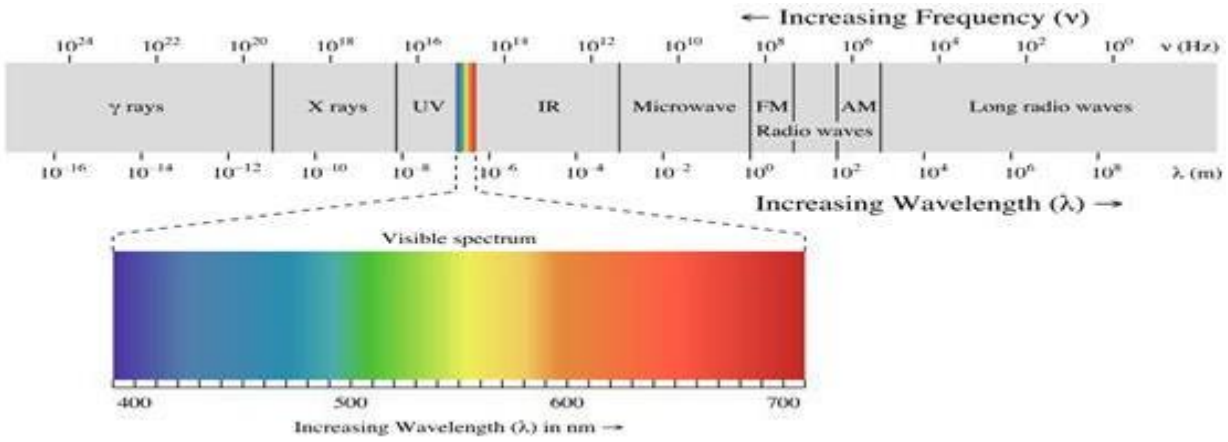
Keywords: Cellular Balance, bioelectric, bio electromagnetic

Introduction: Human beings and the other living organisms are a large collection of individual living cells as their components. Each cell is a fully independent unit, which can solely live forever under optimal conditions. Each cell also can also plan and manage all of its vital needs and treat and rebuild disorders caused by internal and external factors. Study and analysis of living organisms that have been made of thousands of billions of cells are possible by studying and analyzing their single cells. To achieve this goal, all the existing and available theories were studied and analyzed in the first step. There were many ambiguous and unknown points in these documents that had to be clarified step by step.
The great task was performed through hard work and eventually a fairly basic and valuable theoretical framework for fundamental cellular activities was provided. To

elaborate on the fundamental principles of cellular function, I try to use simple language that is easily understood by the general public.

Key point: All activities of living cells are based on bioelectric and bio electromagnetic features.

Cellular biochemical activities pave the way for the cell's bioelectric and bio electromagnetic activities.
Living cells carry out billions of operations in very short periods of time, which are only possible by relying on the fundamental bioelectric and bio electromagnetic capacities. A glance at cellular vibration sheds light on a wonderful world and the necessity of bioelectric and bio electromagnetic foundation of a cell.
Each atom vibrates 10^{13} times per second in normal temperature in the nonliving.
Blue (VIOLET) light has a frequency of 7.5×10^{14} times per second.
Red light has a frequency of 4.6×10^{14} times per second.

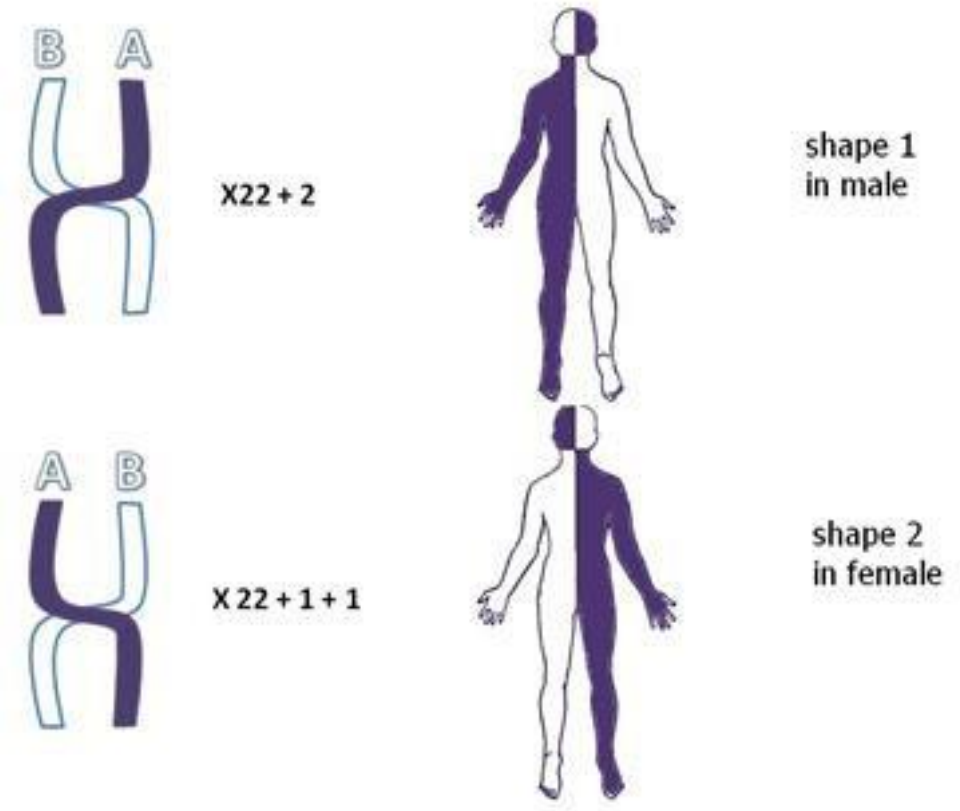


But a healthy, living cell of man vibrates 27000 Billion times per second.
DNA of the same cell vibrates 8,540 Billion times per second. (1)
Please note that the interval of each vibration of a healthy cell is one-27000 Billionth of a second. In the article, I will explain more about the enormous capacity of human cells and the factors of their existence.
Bioelectric and Bio electromagnetic Fundamental Principles of Living Cells
1 – Balance of bioelectric and bio electromagnetic fields in chromosomes
A living cell contains two sets of chromosomes, which are completely symmetric. The total bio electromagnetic charge of each set is opposite to the other one's, but their absolute values are quite equal. Hence, the opposite and equal charges neutralize each other, causing a balance in the cell. The perfect balance in this part helps the cell have an accurate and flawless performance in chromosomal section.
Human's living cell contains 46 chromosomes consisting of two categories having 22 chromosomes each plus two X chromosomes in female and X and Y chromosomes in male. Chromosomes are made up of two main parts: DNA and a great number of small coiled cores called histones. Usually small parts of each DNA helix are wrapped around cores of histones. Histones are the bio electromagnetic centers of chromosomes.

There are bio electromagnetic waves in each chromosome string that causes bioelectric flow in human body. The waves vary in different periods of chromosomal activities. Chromosomes produce the lowest cellular bio electromagnetic waves when the person is in a deep sleep and they produce the highest cellular bio electromagnetic waves during the detachment phase of homonymous and equal chromosomes in cell division (the telophase stage of cellular mitosis).
The bio electromagnetic energy management of cells is the responsibility of a cylinder shaped cell structure called "centriole".

centriol structure

In human cells, this organelle is a small cylinder whose length is approximately 0.4 microns and diameter 0.15 microns. Each centriole is made of nine triplet microtubules – totally 27 – with each of them being responsible for nearly one trillion movements in cells.
To describe the bio electromagnetic balance of chromosomes, we initially categorize them into two A and B types. In other words, Category A comprised 22 chromosomes plus X chromosome for the female sex and Category B comprised 22 chromosomes plus Y chromosome for the male sex. Each category controls half of human body and performs the tasks for the same half.
Category A controls the right part of a male's body and the left part of a female's body from head down and Category B controls the left part of the body in males and the right part of the body in females.
Look at the following picture:



As seen in the picture, A and B chromosome categories control the opposite parts in male and female. It means men and women mirror each other in terms of basic cellular structure.
The bio electromagnetic balance in human's chromosomal structure means while the cells are resting, the chromosomes of A and B categories are quite equal in terms of amount and volume of bio electromagnetic energy and quite opposite in terms of polarity. For example, if chromosome A1 has approximately 2+ Nano gauss bio electromagnetic charge, chromosome B1 should have 2-. If it is so, the balance is established in the chromosome section that leads to the full efficiency and productivity of cells in the chromosome activity.
As seen in Figure 1, chromosome A controls the left hemisphere of the head and the right half of the body and chromosome B controls the right hemisphere of the head and the left half of the body. In Figure 2, it is quite the opposite. This crisscrossed structure neutralizes external unbalancing factors, establishing chromosomal balance.
If there were no cross-structures, unbalancing factors would affect the chromosomes of one category more quickly, causing chromosomal imbalance.
But, in chromosome's cross-structure, the opposite side receives and reduces pressures inflicted on one half of the body and makes it equal in the other side.
The chromosomal balance plays a very essential and fundamental role in cellular activities and its disorder has a fundamental impact on the general activities of a cell. The cross-structure and highly advanced automatic-control system of a cell always creates the balance and protect it.If the impact of internal and external factors in this section exceeds the cell's defense capacity, it leads to chromosomal bio electric and bio electromagnetic

imbalance. The inequity is the main cause of some disorders that will be explained in the next discussion.

2 - Bio electric balance in cell membrane

Cells and usually all the inside organs are surrounded by a wall. Usually, the walls have two layers - internal and external. The basic functions of the walls are based on the potential difference between internal and external layers. The amount of the potential difference ranges from Pico volts to micro volts. For example, the potential in very small organs inside a cell can only measure a few Pico volts and it reaches tens of millivolts in the main walls of a cell. It has not been further explained in this article as the different potential is so broad in different cells and therefore it does not seem necessary to elaborate on it. The key point of the cell wall function is creating the bio electric balance of the internal and external layers while resting. For example, if the internal layer potential is -60 millivolts, the external layer potential should be +60 millivolts. It means the absolute value of these potentials should be exactly equal in terms of amount and opposite in terms of polarity (charges?). In that case, balance will be established in the walls. For the following two reasons, the bio electric balance of cell walls have major role in activities of a cell and its organs.

1 – The cell and its organs should be able to change their forms and move according to the conditions in a very short time and this is possible only when bio electric balance of cell walls has been created.

2 - All inlets and outlets of a cell and its internal organs are on these walls and the walls are the main foundation and fulcrum of cellular channels. Bioelectric imbalance of the fulcrums does not allow the cellular channels do their important functions quickly and accurately, leading to disorder in cellular activities in this section.

Automatic control system always creates this balance and protects it.

If the internal and external destabilizing factors are more than the balance capacity of the cell in this section, the bioelectric imbalance of the cell walls is generated. This imbalance is the main reason behind several diseases, which will be discussed in the next part.

3 - Bioelectric and bio electromagnetic balance of cellular channels

There are many channels in the cell walls, nucleus and cytoplasm, and other internal organs that can be classified into two general categories:

A. Active channels

B. Inactive channel

A. Active channels: The cells and the internal organs experience different stages during the embryonic development. In the most important stage, the cells become specialized as they have to perform specific tasks. The active channels of the cells take the main responsibility of specialization. The active cellular channels become specialized for a particular activity according to the task of the cells during the embryonic stage. The channels usually become specialized for only one particle and rarely for a few particles. The specialization of the cells includes the detailed program of the channels' functions in the cell and all its internal organelles. Based on the duties of the cells and their organs under different circumstances, the

channels allow the particles that are necessary for cellular activities to enter the cell, nucleus, and nucleolus as well
as the other internal organs and the products or wastes of cellular activities are pushed out of the cells and internal organs. The channels work through two fundamental bioelectric and bio electromagnetic methods.
The bioelectric method helps meet the direct needs of the cell and its organs and the indirect needs of the cell and its organs are met through the bio electromagnetic method. Each of these channels has at least one bioelectric section and one bio electromagnetic section.
For example, if internal fluid of the cell needs certain particles and materials, it will directly activate the bioelectric section of the channels in the main wall and the materials will be absorbed from the external fluid of the cell. But if nucleus or nucleolus or their internal organs such as chromosomes need to take some materials into the cell, they will activate the bio electromagnetic section of the channels of the main wall by radio signal and then the channels will indirectly absorb the materials from the external fluid of the cell.
The bioelectric channels are activated only by the inside part of the cell. But the bio electromagnetic channels can be activated from inside and outside of the cell.
The bio electromagnetic control of the cellular channels is possible only through completely conforming radio signals.
The channels are activated in three ways in the cells of living beings:

In the first way, the cell itself activates them to meet indirect cellular needs.
In the second way, the cells of the same group activate the channels to provide their requirements.
In the third way, the central control system activates them to provide its whole requirements.

All of these channels include two parts -- external and internal. Its external section is placed on the external layer and the internal section is located on the internal layer. Internal and external parts of the channels have bioelectric and bio electromagnetic potential differences. This potential difference varies from a few Pico volts to a few millivolts in the bioelectric
section and ranges from few Pico gauss to few Nano gauss in the bio electromagnetic section.
The key point in the fundamental activities of the channels is that there should be a complete balance in its bioelectric and bio electromagnetic sections when they are not working. It means if the internal channel is -10 millivolt, the external one must be +10 millivolt, or if the internal channel is -2 Nano gauss, the external one should be +2 Nano gauss. If such balance exists, the cell can perform its duties completely and precisely in this section.
The automatic control system of the cell always creates balance and maintains it. If the effect of the nternal and external unbalancing factors is more than the capacity of the balance of the cell in this section, the cellular channels are faced with bioelectric and bio electromagnetic imbalance. Such an imbalance is the main factor of some diseases that will be discussed in the next part.
B. Inactive channels: The inactive channels remain inactive till the end of the life of the

living being, because the cell does not need their actions during specialization of the cell in the embryonic period, but they have the potential to become active channels at any time.
It seems that the central control system of living beings repeatedly uses the cellular potential difference for compensation and to replace dead cells by producing specialized cells.
Such cellular ability is very valuable and significant as it makes it possible to change the specialized program of the cells through the bioelectric and bio electromagnetic methods and this produces another specialized cell.

4 – Bio electromagnetic balance of cellular poles:

Vital activities of a living organism depend on the collective performances of billions of cells. The collective performance of the cells also depends on the formation of different clusters of cells in an interrelating structure. The bio electromagnetic field of cellular poles is the main cause of the formation of well-organized cellular clusters. Each cellular set has a precise structure of the bio electromagnetic field of the cellular poles. This exact structure puts the cells next to each other according to their tasks. In other words, the exact collective activities of the cells are due to orderly cellular rows, which themselves are produced by the bio electromagnetic balance of the cellular poles.

The bio electromagnetic field of cellular poles is defined by all components of the cell, which produces bio electromagnetic waves. To be clear, each component of intracellular organs produces the bio electromagnetic filaments and a complex of them produces the main bio electromagnetic field of the cellular poles.

The bio electromagnetic fields of the cellular poles are managed by the centrioles.
If bio electromagnetic field of the cellular poles is quite balanced in terms of volume and rate and quite opposite in terms of polarity while resting, a perfect balance will be created in this section.
For example, if the bio electromagnetic field of the cell's one pole is -10 Nano gauss, the bio electromagnetic field of the other pole should be +10 Nano gauss. Then the perfect balance will be restored. If there is net balance in this section, collective cellular activities will be quite accurate and organized.
The automatic control system of the cell all the time creates balance and maintains it. If the permanent effect of internal and external unbalancing factors is more than the cellular balance capacity, the bio electromagnetic imbalance of the cellular poles will be gradually created, causing certain types of diseases that will be explained in the upcoming discussions.

5 – Power of cellular battery and energy distribution in the cell:

Almost all activities of a cell and its organs are performed by human's bioelectricity current. Bioelectricity is produced by the centers of the bioelectric energy of the cells (mitochondria in most of the cells).
The bioelectric energy centers permanently provide the energy needed for cellular activities, helping the cells perform their general and specific activities without any problems. If the cells are exposed to destructive internal and external factors, the centers immediately take defensive steps and in case of exhaustion and destruction they reconstruct

and repair them. Automatic control system of the cell also monitors activities and prevents any disorder in cellular activities. If destruction and exhaustion are great and continuous, the cells will use too much energy to fight them and carry out their regular activities. Gradually, the process causes a shortage in the intracellular energy equilibrium. Greater pressure will be heaped on the cellular energy centers to compensate for the shortage and therefore the extra activity will cause more exhaustion, more reduction in energy production, and severe shortage in energy equilibrium. If this negative trend continues, the fundamental intercellular activities will be disrupted and the important and fundamental radio communication of the cells will be interrupted with the commanding headquarters (hypothalamus) in the living organism and even it may be disconnected. For this reason, when energy equilibrium shortage approaches the cellular threshold, the cell division command is issued. Cell division command is accomplished in two forms: Intracellular and extracellular.

In intracellular form, when the bioelectricity energy equilibrium shortage in the cell gets the red line or irreparable damages are inflicted on the cell (if the main bases of the cell are healthy), the automatic control system will issue the division command in the cell.

In extracellular form, when the cell needs to divide due to individual performance of the cell or collective performance organization of the cell, the central control system of the living being activates a
special bio electromagnetic command, and then the operations of the cell division are activated.

Thus, the new cell begins to develop and it will face the fate of its preceding cell and will be forced to divide. This process repeats and reaches hundreds of cell divisions. Then the capability to divide will diminish and the aging process will start.

The capability of bioelectric energy production centers in the cell helps the cells have perfect performances and their weakness plays a fundamental role in the aging process and causes a number of
diseases that will be explained later.

The main point of the process is the way of distribution of energy in the cell. The bioelectric energy distribution in the cell is one of the great wonders of creation. We have already explained that all
activities of a cell and its organs are accomplished by the cellular bioelectricity energy. The important point is how thousands of independent units in a cell simultaneously receive their necessary
energy without any direct contact from the cellular energy centers. It is surprising and hard to believe that receiving energy is done in a very short time in some cases. I try to portray a new image of distribution of energy in a cell for the first time in this part.

The cellular bioelectricity energy centers store the generated energy in the molecules that have bio electromagnetic induction properties.

All the cellular energy consumption centers have the energy recipient molecules that work with the help of bio electromagnetic inducing characteristics. When these centers need energy, they connect to the energy producers in the cell and receive their necessary energy. To have a better understanding of the process, you have to imagine two coils. If electricity flows in the first coil, the electricity will be induced
in the second coil that is placed in the electromagnetic field of first coil.

There is an advanced and modern system of energy transfer in a cell and its organelles be a

useful platform for humans in future development.
Before the intracellular organelles need energy, both the energy transmitter and receiver are inactive and no energy is consumed. Immediately after the consumer centers feels the need for energy, the receiver and transmitter make a connection with each other and energy flows.
In fact, the distribution system almost does not waste any energy. But energy is wasted for transmission and induction in other systems and also when energy is needed permanently, energy is also wasted.
The bio electromagnetic inducing property of the molecules of the cellular energy production centers has another unique characteristic. As it was described before, weakening of the energy production centers is the main factor of the aging process. If we eliminate this weakening process the centers are strengthened and the aging process will stop.
If one's bioelectric and bio electromagnetic energy is induced to the molecules of energy production centers in a cell, they will be strengthened and fill their energy capacity. If it is done successfully, the exhaustion of the cell and its division and finally the aging process will end.
Conclusion: The cellular balance of the four sections mentioned above and the capability of cellular energy production centers lead to the flawless performance of the cell and consequently of all organs of the living being.
When it is relatively achieved, all organs of the living being will be in their normal vibration range, described below:
The right half of head: 70 to 78 million hertz
The left half of head: 70 to 78 million hertz
The middle of head: 70 to 78 million hertz
Thyroid and parathyroid glands: 62 to 68 million hertz
Thymus gland: 65 to 68 million hertz
Heart: 67 to 70 million hertz
Lung: 58 to 65 million hertz
Liver: 55 to 60 million hertz
Stomach: 58 to 65 million hertz
Pancreas: 60 to 80 million hertz
Intestine: 50 to 63 million hertz
The vibration of the right and left halves of the head passes 100 million hertz under specific conditions. It is in its lowest level during a deep sleep.
The numbers mentioned above have been measured in weak conditions and before eating meals. The numbers will decrease 10 to 20 percent after eating meals because of production of digestive enzymes. (1)
Vadelayman Ali Cellular Balance Institute is preparing the tables and precise charts of vibration of a cell and its organs and the vibration of human organs in different conditions. We hope to offer an accurate and comprehensive table in this field.
Reference:
(1) The research team of Prof. Bruce Taynew from Washington's Cheni University

Back to Home