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Review Article

The Effect of Inducing the Magnetohydrodynamic Rotational-Translational Motion of the Blood Water Flow at the Micro and Macro Levels of Energy-Mass Compaction

Evgeny Pavlovich Sidorov*

Deputy Director for Research and Technology, Agrostroyservis Research and Production Association, Russia

***Corresponding author:** Evgeny Pavlovich Sidorov, Deputy Director for Research and Technology, Agrostroyservis Research and Production Association, Dzerzhinsk, Russia.

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Annotation

The article discusses the concept of the energy mechanism of hydrogen recovery in the processes of synthesis of the water flow of blood and metabolism in the organs of the human body. It is assumed that all chemical and biological processes occurring in man are inextricably linked with the laws of natural life and, due to the fact that they repeat the already discovered scientific methods and methods of technogenic organization of technologies and production of various types of products, it is possible to use them to create an energy tool in order to operate the internal forces of the human body, in the direction of its change and treatment. It is asserted that all biological and chemical processes are carried out by photon ionization of electrons (emission and absorption of photons) in a molecule and cluster of water, which is the only energy force for the generation of the processes of destruction and synthesis of chemical compounds and metabolism. It is proved that the ionization energy is achieved by a number of moments of electrohydrodynamic and mechanical forces that generate the final Lorentz force in the magnetic field of the environment and, in particular, the magnetic field of the Earth. It is suggested that all interconnections and displacements of chemical particles in cell volumes and membranes occur in a state of destruction of bonds between molecules and atoms, through further photon construction (synthesis) in a new place, with a transition from the state of a de Broglie wave to a corpuscle. It is claimed that the hydrogen atom plays a major role in inducing ionization conditions and combining all chemical elements through hydrogen bonds.

Keywords: Hydrogen recovery mechanism, Atomic magnetic moment, Electron paramagnetic resonance, Energy change gradient, Temperature gradient, Electrohydrodynamic force, Lorentz force, Ionization potential, quasi-dipole, Impolosia, Processional oscillation amplitude, Larmor oscillation frequency, Vachayev's energoniva, Electret state, Hydrates

Review

"The science is developed through constantly changing, expanding, improving, and refining theories. We can see the most powerful impulses in the development of the theory when we manage to find some unexpected experimental facts contradicting the common views. [...] Thus, the main driving power of the development in physics, like in any other science, is the search for these contradictions."- П. L Kapitsa

Classical hemodynamics does not describe in full the mechanisms of blood transport in the cardiovascular system. Physiologists advanced a hypothesis of Helical (rotational and translational) Blood Flow (HBF) in the cardiovascular system. Russian scientists, *RI Kirsanov* and *VP Kulikov*, conducted studies and recorded the facts for the phenomenon of the helical blood flow in the main arteries in healthy people. Studies have shown that the helical blood flow is a particular case of swirling motion of an ideal fluid. Let us consider the physical principles of HBF and the reason for the

initiation of this flow. All blood vessels are closed blood transport systems of tubular, circular section. Helical fluid motion is a motion in which the vortices lines coincide with the lines of currents at all their points. Each fluid particle not only moves translationally along its trajectory, but also rotates around the axis of the tangent to this trajectory at the point of particle position. At the same time, the motion of the entire mass is initiated due to the shift of successive fluid layers relative to each other. In other words, the flow rotation around its longitudinal axis and axial motion occur simultaneously. The kinetic energy of the flow rotation around its longitudinal axis is exactly equal to the kinetic energy of the longitudinal flow. Therefore, the linear velocities of the rotation of the flow and its longitudinal motion are the same. The helical fluid motion is due to the particles' energy change over time which occurs when they participate in one of the types of rotational motion in the vortex helical flow. A constant change in the boundary conditions of the fluid flow occurs in blood transport systems, and blood vessels. These are various obstacles or boundary surfaces, etc.

In the straight sense, the fluid has to start wriggling and twisting in spirals forming vortex filaments and rollers by which the flow rolls along the boundary surfaces. It is a natural mechanism of flow transformation under changing external conditions, and it is realized by helical motion. The reason for any fluid motion is inequality of pressure on its boundary surfaces. This pressure inequality is a driving force for water, directed towards lower pressure. The dualism of the rotational movements in the left-hand and right-hand directions or the peripheral free vortex and the central (axial) forced vortex is manifested in a helical water vortex and therefore the water passes along two different paths. Peripheral water masses move along a centrifugal path (water is pressed by the centrifugal force against the walls), and the central flow has a centripetal path and represents a single central helical flow. During centripetal helical rotation of water in the pipe, the water flows move to a point on the water mass axis while the speed increases and the flow accelerates. The pressure at this point decreases proportionally to the flow acceleration. In other words, an additional pressure gradient occurs increasing towards the center due to the discharge in the central part of the pipe towards the motion axis. The vacuum level and, accordingly, the flow rate will be determined by the linear velocity of water helical motion, the spiral length, and the inner diameter of the pipe. Along with the breaking of hydrogen bonds, oxygen and hydrogen atoms are destroyed at the same time. When transitioning from liquid to gaseous state, the oxygen atom volume in the water molecule is reduced, which further reduces the pressure at the onset of the flow. This regular pattern is clearly observed when analyzing the parameters of blood motion through the vessels. However, it should be noted that this process will remain only for as long as the external initiation of fluid rotation occurs and if the blood aqueous solution remains in a state of motion.

During centrifugal spiral rotation, the flow centrifugal force or inertial force occurs which affects the state of the liquid in the potential field of gravity perpendicular to it by increasing the potential energy at the wall and, accordingly, reducing the pressure at the pipe axis. During dynamic fluid rotation, axial circulation is a self-sustaining non-working process. In the process of spiral vortex rotation of the fluid flow, a periodic conversion of one type of energy to another one occurs. A non-working process is a state where the initial energy of the fluid motion is preserved and the energy for this is found by the flow itself. Axial circulation is a mechanism that ensures the constancy of the matter energy at deformation of its energy state or a reaction to the changes in the external ambient conditions. We deal with the case when the energy of the fluid motion is generated by the deformation inside the flow due to a change in the field potentials-a decrease in the axial pressure and an increase near the pipe wall. The difference between the values of the centripetal and the centrifugal force in the vortex determines its intention to make up for the energy loss due to the force release in the direction of the spiral flow motion. And this intention is realized in maintaining the linear flow rate due to the centripetal force exceeding over the centrifugal force and, at the same time, it allows the vortex to obtain energy inside the water flow. This happens at the expense of maintaining the energy potential of water molecules during the exchange of the chemically fixed energies of oxygen and hydrogen atoms. Considering that water has a dipole molecular structure with a plus in the hydrogen zone and a minus in the oxygen zone, during the vortex motion, the concentration of pluses in the vacuum zone and minuses in the zone of maximum water pressure near the pipe inner surface occurs.

The dipoles line up in strict radial orientation over the entire inner surface and the centrifugal part of the flow. As a result of such a motion, the molecular bond strains up and starts to interact with the vacuum which was formed due to the difference in the energy potentials of the centripetal and centrifugal motion fields. When the molecular structure of water is extended, a change in the angular structure, i.e. a decrease in the angle of 104.5degrees occurs. As a result, the isosceles triangle of the interaction of oxygen bonds with two hydrogen atoms expands straining the bonds of hydrogen and oxygen atoms. When the molecule is stretched, energy flows from the vacuum to the pressure zone. Thus, in a state of constant bond extension, the energy is directed for output to the medium, that is, the bond stress increases its energy potential in the form of potential energy. And this energy immediately goes for correction of the deformation due to the vortex flow rotation. At the molecular level, this is explained by the conservation law of the mean energy of the balanced system of the cluster masses. More specifically, two molecules of hydrogen and one molecule of oxygen must be broken down into atoms to produce two molecules of water. As a result of the subsequent synthesis of two water molecules, more energy is released than the energy used to break down two hydrogen molecules and one oxygen molecule. The energy difference will be - 285.8kJ/mol per water molecule, which is enough to compensate for the deformations. In the process of the water vortex motion, due to the opening of bonds and the formation of new ones, the transition of water molecules from one energy state to another occurs, which is represented as a deformation of their energy state in science (e.g., the jump of an electron from one energy level to another one).

The circulation of the medium additional energy aimed at correcting deformations turns the water vortex motion into a spontaneous process without consumption of the external mechanical energy of rotation and, accordingly, without linear displacement. The excess kinetic energy is used to increase the potential energy near the wall by the amount of increase in the fluid kinetic energy which characterizes the value of the complementary energy maintaining the fluid rotation. It should be noted that the high intensity of the processes of energy bond exchange in water molecules is determined by its special combination of molecules and the presence of hydrogen bonds. Water consists of clusters, clathrates and tetramers (80%) which carry very high density information, which contributes to maintaining the strengths of the bonds at their stretch and smooth energy transfer during the flow vortex motion. The water molecules are so close to each other that the attractive interaction forces occur between them, which form an additional energy component of potential energy due to their resistance to stretching the bonds. It should be pointed out that water clusters are formed by proton-electron and electron-electron bonds. The strength of the latter is determined simply by the enormous electric field strength of the electron equal to 2.448x1014V/m. It exceeds the strength of man-made electric fields by almost 7-fold.

Taking into account that the human blood vessels are a transport system that, according to its characteristics, is fully consistent with circular cross-section pipelines through which rotational motion of the blood consisting of plasma (90%of water) and vital chemical elements occurs, all laws of the vortex spiral fluid motion can be applied to describe the blood motion in the human body.

All the driving forces acting at the level of substance are initiated by the transformations that occur in the micro world of molecules, atoms and elementary particles and follow the laws of quantum mechanics. Therefore, the processes occurring in a spiral screw vortex bounded by blood vessels should be also classified as physical phenomena generated by the internal interaction of the elementary particles that make up the molecules and their bonds. All structural elements of the macro- and microworld have a homogeneous essence and differ only in the degree of compaction allowing the researcher to represent the degree of parameter probability and classify them as the calculation units of the micro- or macroworld during the experiments. In accordance with the determinism law, the motion processes that occur at the level of elementary particles can induce the motion of clusters of matter, and in our case, the rotation of the blood stream. If electrically conducting fluid, for example, blood, moves in the Earth magnetic field, then electric energy is generated or electric current is induced in it. In this case, the magnetic field of the blood flow clusters is induced which we consider as water clusters. The geomagnetic field strength at the Earth's magnetic poles ranges from 0.6 to 0.7 Oe, and that at the equator ranges from 0.3 to 0.4 Oe. Therefore, a different electric field in the blood vessels is induced in different regions of the Earth, which affects the intensity of the jet-axial rotation of the blood. Therefore, when relocating to a new place of residence it is necessary to get used to these values of electric field strength or, as it is commonly said, you need to acclimatize. From a physical standpoint, it takes time to realign the human body's magnetoelectric and gravitational fields to bring energetic interactions (destruction and synthesis of water-containing clusters) with the Earth's magnetic field strength. Above all, it is necessary to match the new values of the angular velocity of rotation of the blood flow with metabolic rate and the rate of assimilation of waste chemical compounds.

Within the framework of this concept of the blood motion, the assumption of stimulating the sports achievements of athletes living at the equator and competing in places with a higher magnetic field of the Earth is of interest.

The magnetohydrodynamic effect of occurrence of electric field and electric current in a magnetic field is based on the phenomenon of electromagnetic induction, i.e. the occurrence of an electric current in an electrolyte flow crossing the magnetic field lines (blood is comparable to salt water in regard to salt saturation). The rotation of water is induced by the ion motion of the electrolyte (blood) electric current.

To calculate the values of the parameters of the blood aqueous electrolytic solution flow initiated by the ionic factor, it is possible to apply the mathematical model of automodelling problems about the flow of viscous incompressible multicomponent medium composed of anions, cations and neutral molecules in circular tubes in the presence of an external transverse homogeneous magnetic field (the Earth's magnetic field). This scientific development was fulfilled by the scientist of Tomsk State University, *MA Bubenchikov*, and an article "Mathematical modeling of electrolyte dynamics in magnetic field" was published in the University Bulletin. According to calculations, the greatest potential difference in the electrolyte flow occurs in the sections of pipelines isolated from the electric current. This condition corresponds to the blood vessel structure. Calculations revealed the effect of ambipolar diffusion in the electrolyte. This confirms *AL Chizhevsky's* hypothesis about the generation of electric potentials by moving physiological fluids, which, basically, are classical electrolytes.

The ions moving in the Earth's magnetic field are affected by the Lorentz force that twists their trajectory into a spiral and excites the spiral-axis vortex rotation of the blood flow. Metaphorically speaking, the Earth's magnetic field catches onto the blood magnetic field induced by its dipole moment electric current, and drives the blood in a vortex helical rotation in the opposite direction while separating the flow into centrifugal motion at the outer wall of the vessel and jet-axial implosion rotation. The latter allows for the continuous non-working motion mode, which we have discussed previously. The change in the signs of the electric field charge to the opposite one does not affect the direction of vortex motion, i.e., at any point of the globe the direction of blood flow does not change. The electric field of the water molecule is similar to the electric field of two-point charges + q and - q located at some distance from the molecule. The electric field intensity can be determined from the principle of superposition of electrostatic fields through an electric charge. Based on this knowledge, we can calculate the value of the energy force of the excitation of blood rotation and see the root cause of its motion. The induced stationary fields

of gravitation, electricity and magnetism obey the laws of Newton, Coulomb and Lorentz and cause radial-central translational motion of matter. And vortex electromagnetic fields cause mechanical rotation or spiral-radial motion of matter and vice versa: such matter motion causes vortex and induction of all three vortex fields, i.e. the mechanical rotation of blood (closed vortex particle) induces the motion of particles, and accelerated-slow motion of atomic nuclei, atoms and molecules in their own environment is induced by vortex particles (vihrons).

The existing dualism of magnetoelectric forces effect of micro- and macroworld of blood water flow can be used when the flow stops, by creating a potential value of magnetohydrodynamic effect, capable of producing an electric current activating the movement of ions in blood aqueous solution and the blood flow. I believe that the application of external electric discharges to the heart is not only ineffective, but criminal. Since additional initiation of increased movement (or triggering of this movement) of blood flow in microvessels completely depends on the pressure (movement) of venous blood water flow, and in the heart body (its energy-mass) it is subject to the laws of stationary sources, therefore, constructively, it does not have the ability to drive the energy-mass of the heart into directed movement. The heart, in the circulatory structure, performs the structural role of a mechanism for opening and closing valves by the force of pressure of the blood water flows (in classical mechanics, it is known as the "slide valve"). Therefore, the effect of an additional electric field on the dipole structure of blood water flow increases the resonance of electromagnetic processes and initiates increased ionization due to the additional magnetic field. As a result, the Lorentz forces induce a more intense value of implosive twisting of the blood water flow and, accordingly, a higher value of its pressure, or "triggering" of the vortex helically-axial motion. It is worth mentioning that blood water flow is a vortex source of electromagnetic field states. However, the theory of the effect of a strong electric field on the energy-mass of the heart is wrong, because it does not correspond to the correct constructive effect (this is equivalent to the process of affecting the design of a non-working electric motor when disconnecting it from the power supply of the electric current running through the wires).

Modern Academic Perspectives know how to substitute cause for effect and base the treatment of the human body on these concepts. The presented concept of the energy-dynamic blood flow explains rather clearly the unstable blood flow of astronauts, being in isolation from the initiator of the orientational water polarization, at which the dipole is affected by the angular momentum of the Lorentz forces. If the average magnetic field strength at the Earth's surface is 0.5 oersted, the magnetic field strength of the world's interplanetary medium is just 10-4 to 10-6 oersted. And this value is nearly a million times smaller. So, metaphorically speaking, there is something "to cling to" to bring the blood into a vortex rotational motion with jet-axial flow excitation. The causes of serious dysfunction of the cardiovascular system, the pleura, and lungs are evident. This, we might say, is the deep space at a distance of 22.5 Earth's radius, but there is a significant decrease in the strength of the Earth's magnetic field even in near space, in geosynchronous orbits and even closer. However, Russian scientists are planning to conduct an experiment on the International Space Station to study the effect of a weakened magnetic field on humans only in the near future. I have high hopes that the research program will include a study of *D Keeley's* experiments, as well as those of Harvard professor John Hutchinson, performed in the area of weakening inertia (mass charge) and also of increasing energy-mass volume.

What is common for the micro- and macroworld of electromagnetic fields is the space of stationary and vortex sources, existing in the water substance of the human body, as a set of corpuscles, the smallest in size, defined as structureless quanta of space, the size of which is much smaller than the Planck size. Blood realizes rotational motion and is, simultaneously, a vortex source of this motion, while aqueous solutions of intracellular and extracellular fluids relate to stationary sources of motion. Therefore, both components of the aqueous solution of the human fluid have a homogeneous structural pattern of the micro- and macroworlds and differ in the manner of motion only. In both cases, the energy-mass motion of matter clusters is induced due to the generation of the magnetohydrodynamic effect in the Earth's magnetic field. Clusters of matter should be considered as both individual atoms, and molecules formed from them, in the unified and inseparable balanced system of interactions of their internal fields with the external fields (for example: the Earth's field). Clusters of matter can be at rest and polarized, and, at the moment of the occurrence of an external gravi electromagnetic signal of the reference force, the internal fields of the blood cluster are excited by external stochastic fields (Earth) with the occurrence of translational-rotational motion. The resultant clusters of translational-rotational motion already possess new properties compared to clusters of the rest state, such as density, temperature, thermal conductivity, and others that correspond to the SI system. The main reason for development and maintenance of jet-axial blood motion through the vessels is functioning of implosion rotation at which the effects of the recently discovered "Tornado" law are manifested. Implosion is the result of superfluid transfer of water flow by a conical (concave) rotation of the jet narrowing at one quarter of its wavelength, i.e. the motion imitating the motion of atoms along the potentials of a gravitational waveguide. During the jet implosion, a mechanical macrovihron is generated in the form of a technical antigravitational monopole of the same sign with the central field of the Earth, with which it interacts and repels during its motion creating at the same time the conditions for the blood weight reduction. The particles of the blood cluster are simultaneously twisted away from the walls of the vessels, which contributes to reduce the resistance to its motion by organizing internal screwing along the guide and narrowing line of the blood flow to its central axis. The experiments of *NV Kosinov and VI Garbaruk* confirm the phenomenon of self-induction and rotation, induced by the triad of energy fields (Figure 1).

The scientists have documented the following: under the effect of implosion the molecules are arranged in the radial-axial direction, the vector of action of the suction force is also oriented along the axis at which the most significant reduction of heat and pressure is observed.

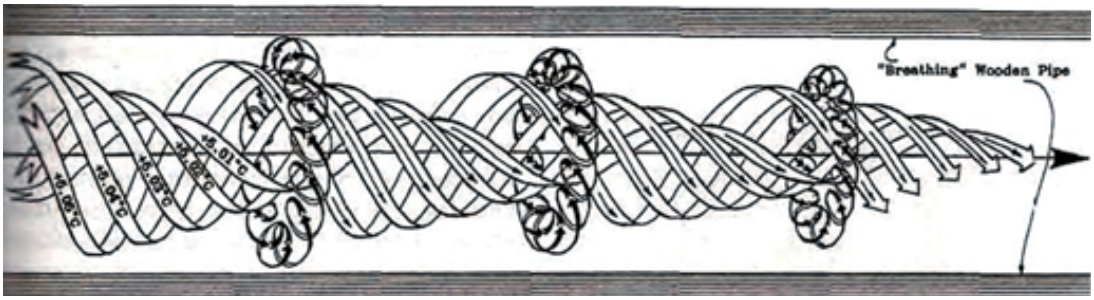

Figure 1: Hydrodynamic scheme of implosion motion of blood water flow in a blood vessel.

F Ehrengaft from Austria has calculated that implosive forces in man-made installations of restricted pipeline systems can reach values 127 times higher than the expansive ones. This blood ability can be used in case of circulatory diseases associated with arrhythmia, obstruction and occlusion of blood vessels by installing specifically directed semi-open corkscrew nanochannels in a vessel. *V Schauberger* invented and tested by an experiment the design of a tapered helical element in the water flow in a pipeline. At the installation site, the flow reached a helically vortex state, which significantly increased the angular and linear velocity and initiated a pressure elevation (Figure 2).

Figure 2: V. Schauberger's design generating implosion motion of water flow in a circular cross-section pipeline.

At certain values of the blood stream double twisting at quarter-wavelength of a convergent cone, the effect of water vortex polarization occurs, and the blood can be densified to any degree of hardness on exit from the volume phase of coherent waves.

And this physical ability of the blood can be used for blood vessels cleaning. The blood vessels of the human body have an internal structure contributing to the twisting of the blood quantum. The implosion produces a reverse suction effect in the flow axis area, triggering the binding of oxygen, which becomes more and more passive closer to the flow core. It results in compression of the peripheral mass, and an increase in the velocity of the self-twisting blood flow without increasing the frictional force.

Long-term experience in monitoring the blood motion shows that the complete blood circulation time makes 27seconds. In addition to the above, the passage of the lesser circulation is 4-5 seconds, while that of the greater circulation is 22-23seconds. During this time, the blood must consistently fill all the volumes of the vessel sections located between the heart valves and generate the necessary pressure to open and close them, as well as generate the necessary pressure to deliver it to the saturation system with useful elements. The processes of absorption and assimilation in different organs take different time periods, so the pulse-cyclic activity of the local valves (more correctly, the parameters of the blood flow) is oriented to the main valves of the circulatory system which are located in the heart. The heart plays the part of a "spool" opening and closing valves, according to the signals of threshold states of parameters of saturation of vital organs with necessary elements. These signals are formed by the blood motion in the vessels and are manifested by the pressure limit values. In a stably working, healthy human body, the pulse displays the moments of opening and closing of the heart valves at the moment of inducing the pressure necessary for this by the blood flow, in the border areas of the cardiac chambers. However, the pulse-cyclic blood motion occurs in a continuous flow, and its cyclicity largely depends on the volumetric blood changes associated with the transmission of vital elements to the human organs, as well as the time of exudate assimilation. It should be noted once again that all the processes of blood motion must be considered at the level of movement of elementary particles and quantum transformations, so the time parameters of cyclicity are equal to second fractions.

Parameters of border-line pressure for opening and closing the heart valves and the cyclicity of their actions which differ from the normative ones show the health status of human organs. For example: a healthy person's heart rate is 60beats per minute. Therefore, the blood flow must create pressure differences between the opening and closing the heart valves allowing to fill and empty the heart chambers involved in the greater and lesser circulation within one second. If this does not happen then processes influencing the change in the parameters of the jet-axial rotation of the blood flow occur on the path of blood circulation. Decrease or increase in the adsorption rate of metabolic products from the blood that is possible during sleep and increased physical activities, as well as disease states of organs can be noted as an example.

The human blood volume is about 4-5liters, with 55% or 3liters of water in it. Water in the human body makes approximately 75% of the volume weight. Each person has his own individual energy field; these are variable electric and magnetic fields that generate each other. It is induced by the vortex spiral rotation of atoms and elementary particles that make up atoms. Due to the fact that the aqueous solution of intracellular and extracellular fluid is generated in the form of stationary sources and exists in the human body in a bound state limited by the boundaries of individual clusters, there is an oscillatory motion of water molecules and clusters with a linear velocity of 1,700m/s within the de Broglie wavelength that induces an oscillatory magnetic electrohydrodynamic field and electric current of variable potential by Lorentz forces in the Earth's stochastic magnetic field. Oxygen and hydrogen atoms are subject to rotational spiral-radial motion, relative to their axis with the support process on orientational radiation polarization and absorption of photons by electrons of the atom. The atom in general is electrically neutral because outside of the atom the external electric field of the nucleus is completely compensated by the external fields of electrons located at fixed energy levels of electrons. Thus, an atom shows greater resistance to polarization than a molecule, since polarization is carried out by the energies of the external electrons and protons only. The process of inducing the electric potential necessary to break hydrogen bonds is possible by implementing the theory of the resonant circuit for the water molecule of Meyer's patent, which allows the accumulation of electromagnetic radiation quanta energies with a gradual transition to the internal energy of the organized structure of water. This energy will be accumulated by it unless it reaches the hydrogen bonding energy, which is 500 to 1,000times greater than the electromagnetic field energy of the molecule. Once this value is achieved, the hydrogen bond is broken and the structure deteriorates. There is an avalanching release of energy, which subsequently generates metabolic processes and, in particular, the birth of new chemical elements in the human analog of *Vachaev's* plasmoid. It may be noted, according to Meyer's patent, that the combination of a pulsating and a constant electric field results in the fact that at some point the strength of the electrical bond in the molecule is weakened to such an extent that the strength of the external electric field surpasses the bonding energy. Both oxygen and hydrogen atoms are released as independent gases.

Optimal gas output is achieved in a resonance circuit. Structural parameters of blood vessels and the magnetoelectric state of blood correspond completely to Meyer's theory for technical systems, thus, it is possible to apply this theory to scientific studies of human energy functioning with a high degree of confidence. Meyer's structural design produces conditions for the splitting of the water molecule into hydrogen and oxygen due to the resonance of water molecules, resulting in a higher rate of energy difference during synthesis, and in a more productive and stable metabolic process in the blood. In its liquid state, water is an unordered liquid, hydrogen bonds are spontaneous, with a short life span, and are broken and formed again quickly. Single water molecules are called quanta, and structures of pooled water molecules are called clusters. Clusters are periodically broken down and formed again in water. The jump time amounts to 10-12seconds. While the mathematical and physical part of Meyer's theory explains some processes of energetic interactions of hydrogen atoms, oxygen and water molecules, along the exchange of chemical elements of blood, it is based on technogenic capacities of structures and does not reveal the inner natural power of water and aqueous solutions of blood. Resonant accumulation of excitation energy of bond destruction in technogenic devices occurs within tenths of seconds, while in human blood these processes occur within millionths of seconds. It is hardly possible to imagine the energies that the nature operates with in the human body.

The energy process of two water molecules synthesis is characterized by the energy consumption for the destruction of two hydrogen molecules and one oxygen molecule, which is equal to 14.19eV, and the energy release is equal to 5.98eV during their synthesis. The amount of energy received as a result of the synthesis of two water molecules equal to (14.19+5.98) eV is greater than the energy consumed for the destruction of two hydrogen molecules (9.06eV) and one oxygen molecule (5.13eV) because there is a simultaneous transition of the oxygen atom from the gaseous to the liquid state with a decrease in its volume. In this respect, the ring electrons of the oxygen atom will descend to lower energy levels, having emitted photons with the release of energy consumed for the destruction of two hydrogen molecules and one oxygen molecule, i.e. 14.19eV. The resulting energy difference equal to 5.98eV will be generated into the blood cluster's own energy or into the surrounding ether, which will be extracted by electrons of atoms and molecules in the process of photon ionization for the subsequent synthesis of blood flow molecules generated by the vortex radial-axial rotation forces. At the same time in the rotating cluster of blood aqueous solution, in order to perform metabolism between the cluster electrons of incoming blood and the cluster electrons of diverted blood from the reabsorption site are induced by paired photon emission and absorption of electromagnetic photons and gravitons, which generate the energy necessary for desorption and reabsorption of metabolism of blood aqueous solution into the system.

The external magnetoelectric field of the blood aqueous solution, as well as the aqueous solution field of the intracellular and extracellular fluid of the whole human body are in a close energetic interaction, since, joining together, they are absorbed by the external energy field of the surrounding space. Energetic processes of transformations in micro- and macrostructures of aqueous solu-

tions, which are caused by implosion rotation, are subject to the law of conservation of the average energy of the cluster energy-mass. Therefore, any changes in the energy state of one of the clusters initiates changes in the values of the triad of field indices of all elements of the cluster structure, through the wave chain of emission and absorption of photons at the boundaries of these structures. And, due to the interaction of electrons, atomic nuclei, atoms and molecules at the quantum level, diagnostic parameters are induced in the cluster as a whole. For instance, it has been observed that, when the angular velocity of the spiral-screwed vortex rotation changes, the blood temperature changes because the equilibrium energy state of the interaction of the cluster elements is violated. This occurs as a result of changes in the threshold indicators of blood motion, pressure and rate of the jet-axial flow. Parameters characterizing the current vital activity of the organism show that the organism performs normalized processes of vital activity, corresponding to the maintenance of the law of conservation of average energy-mass energy and, among other things, the temperature equal to 37 degrees Celsius. Thus, a change in the blood temperature shows diagnostic parameters and immediately initiates a change in the temperature of the water component of the whole body by means of photon ionization, which indicates the symptoms of a "disease" in the system. According to the definition of the internal energy interactions of the micro- and macroworld, the temperature is an indicator for the presence of a certain level of quantum transformations in the system, and its numerical value reflects the intensity of quantum transformations. *FM Kanarev* [1] calculated the value of the temperature gradient that arises as a result of absorption of one photon when the bond between water molecules is broken. These calculations allow us to relate the energy parameters of the processes of destruction and synthesis of molecules of blood aqueous solution to the changes in its parameters within the SI system. In other words, to build a mathematical bridge in the energetic concept of diagnosing and treating diseases between the micro- and macroworld. In order to prove the validity of these conclusions, I will cite the calculations of FM Kanarev [1].

It is possible to calculate the energy consumed for heating one water molecule in clusters; this is the amount of energy by which the binding energy between water molecules in clusters changes when it is heated by one degree. It turns out to be equal to 0.00078 eV, corresponding to the emission-absorption energy of relic photons. Thus, the energy of the photons absorbed by the water molecule electrons is the energy by which the binding energy decreases when heated by one degree. ... The minimum value by which the binding energy can change is 0.000022 eV, and the minimum gradient of temperature change is 0.03°C.

The internal natural forces of blood aqueous solution can be estimated using the following example. To heat 5 liters of blood by one degree, the human body would require the following amount of energy, generated by the absorption of photons.

$E_{1\ deg.C} = 7.8x10^{-4}$ eV x $3.34x10^{23}x5 = 130.26x10^{-19}$ x $1.602x10^{19}$ = 208 J, where:

$3.34x10^{23}$-the number of water molecules in one liter of water.

And it requires 20,950 J to heat 5liters of water by external energy sources. When inducing in the blood vessels the jet-axial vortex rotation of the blood with an angular velocity of approximately 300 - 600 rpm, water is capable of releasing two joules of internal energy in the form of radiation or heat per each joule of energy consumed for its untwisting, which is further spent at the level of the microworld compaction on the destruction of hydrogen and oxygen molecules and the synthesis of a water molecule. Of course, the implementation of these processes is possible only when there is a correspondence of dimensional parameters of the microworld elements, which mankind cannot yet reproduce in man-made constructions.

In the macroworld mechanical virions, created by vortex rotation, initiate the excitation of energetic forces of synthesis or decay of atoms and molecules in the microworld. In this respect, it is possible to achieve the separation of electric fields by the sign of the potential charge, and initiate the removal of the obtained ether from the micro space of the cluster atoms from the grains-electric potentials. Therefore, it is possible to partially eliminate the inertia (mass charge) of blood flow in a particular section of blood vessels. *The state of blood aqueous solution, lacking the properties of gravity, dramatically increases the speed, pressure and decreases the temperature of the blood at the beginning of the flow or in a diagnosed place*. The creation of such energetic conditions for the state of blood in terrestrial conditions will allow to study the blood circulation of astronauts in zero-gravity state.

Ionization of an electron from a hydrogen atom shows the process of blowing off the electric microscopic space with a decrease in the cluster volume by 10^{15}. In accordance with the determinism law, the pressure in the vortex blood flow decreases, which initiates its further motion. On the other hand, during the synthesis of the blood aqueous solution the oxygen atom in the water molecule must also reduce its volume during the transition from the gaseous to the liquid state, which amplifies the effect of generating a reduced pressure ahead of the flow. *It can be fairly safely asserted that these processes of vortex spiral rotation generate a pressure gradient in the flow, which induces and maintains axial motion*.

Based on the studies, hemodynamic parameters of blood flow were determined, namely: cross section of veins, arteries, capillaries, volumetric blood flow and pressure before and after vascular valves. These parameters made it possible to calculate the angular velocity of the jet-axial blood flow which can form a vortex helical motion resulting in the polarization of a water molecule and ionization of hydrogen atoms in all types of vessels (Table 1).

The concentration of oxygen dissolved in water at 20°C has a maximum value of 8.2mg/L. In a free state, oxygen is dissolved in the blood flow in an amount equal just to 0.03% of the total oxygen capacity of the blood. The remaining mass of oxygen, that is, the supplied molecular oxygen, is converted into hydrated molecules and ions (hydrates) in the alveoli and capillaries of the lungs. Hydrates (hidratos de hidrocarburos gaseoses) are inclusion compounds (clathrates) in which molecules of hydrocarbon gases and oxygen not exceeding 0.69 nm in size fill the structural voids in the crystal lattice formed by water molecules. Such hydrate embedding

is characteristic of the mechanical bonding of molecules and their ions in the crystal lattice of water clusters and does not always require absorption and release of energy during the disruption and synthesis of this compound. In other words, water is a clathrate hydrate and is a clathrate compound in which the host molecule is water and the guest molecule is usually a gas, and in our situation, a molecule of oxygen and carbon monoxide. Gas hydrates (water, respectively, and blood water flow) form two crystallographic cubic structures, i.e., S1 and S11 structures. Whereby, the former is a carbon-iron hydrate and the latter is an oxygen-iron hydrate, both of which transfer oxygen and carbon dioxide in their structural composition. Thanks to its clathrate structure, a unit volume of aqueous clathrate hydrate can contain from 60 to 100 volumes of oxygen or carbon dioxide. However, Modern Academic Perspectives do not take into account clathrate-hydrate delivery of oxygen to cells when developing therapies for the human body.

Table 1: Values of blood flow parameters.

Vessels	Diameter, mm	Rate, cm/sec	Pressure, mm, Hg	Angular Velocity, rpm
Aorta	20	50	50-150	477.5
Arteries	5-10	20-50	80-20	764-954
Arterioles	0.1-0.5	1-20	50-20	1,910-764
Capillaries	0.5-0.01	0.05-0.01	20-10	19.1-38.2
Venules	0.1-0.2	0.1-1	10-2	382-9,549
Veins	10-30	10-20	(-5) - (+5)	1,909-1,273

The problem of the nature of hydrates was introduced by a German physiologist, Kessel, whose research resulted in the development of an electrostatic theory of the chemical compounds structure. This theory makes it possible to explain the attraction of water molecules to oxygen ions with a large charge and a small volume during the formation of hydrates and their "clouds" of water molecules, carried away by the ion during its movement in the electric field by the forces of orientational polarization Thus, the initiation of blood and cellular and intercellular solutions movement, their penetration through epithelia and endothelium, is realized by the electrostatic attraction of all H_2O molecules by ion-hydrate in a given flow of solution (including blood), which weakens in the process of removal, but is picked up, in a chain of motion, by another ion in the same flow direction. The penetration of hydrate, with a "cloud" of water molecules, into the volumes of other cells adjacent to the cell solution can result in reactions of totally different directions; firstly, it reduces the concentration of the cell solution, which disrupts the energy balance of metabolism, and secondly, it can transfer viruses and other undesirable elements. However, the transport of chemical elements and compounds formed as a result of metabolism is also realized in this way.

Besides electrostatic, dipole-dipole interactions appear between the solution ions and the solvent dipoles. As Born showed, the electric force field of ions orients water molecules, being dipoles, so that they turn their positive hydrogen (H) ends to the negative ions. Therefore, there is an electrostatic attraction between ions and water dipoles, which creates an "atmosphere" around the ion of water molecules, entrained by the ion as it moves in an electric field. Simultaneously, there is a magneto-hydrodynamic effect of Lorentz forces in the blood flow, which is an electrolyte, an effect driving the ion with the "atmosphere" of molecules into rotational axial motion, in the direction determined by the left-hand rule. Thus, the oxygen ion with water molecules moves within the erythrocyte into the cells and, through the membranes, outside the cell. Certainly, to generate such movement, it is necessary to induce external and internal energy potentials of magnetic-electrical fields in a specific place for metabolism. These processes will be discussed later, taking the ionization of hydrogen compounds as an example.

Both oxygen molecules and single ions of any substance dissolved in water are subject to the process of hydration. Oxygen hydration determines the chemical stability of ions (hydrates), in a valence bond with a water molecule, in a blood solution and prevents the combination of ions into more complex chemical compounds in the process of energy impact of dissolved elements in the blood water flow. That is why oxygen ion-hydrates allow movement through the blood vessels, to the site of synthesis, without significant loss of oxygen, i.e., without excessive association. Hydration of oxygen molecules becomes possible due to its high degree of electron affinity (Linus Pauling electronegativity value is 3.44). Thus, oxygen has a strong oxidation energy and is an extremely corrosive oxidizing agent. For instance: the energy of affinity for an electron or the energy released in the process of electron attachment of oxygen to a water molecule in hydrate is 1.47 eV per atom, while in hydrogen this parameter is twice less and is equal to 0.75eV per atom. The studies performed by Pickering and Jones showed that, according to the hydrate theory, there are continuous series of hydrates with variable composition in aqueous solutions, unstable, easily disintegrating and transforming into each other. In response to Modern Academic Perspectives, I have ventured to suggest that heme (a ferrous atom with an oxygen ion and a water molecule) is an oxygen-ferrous hydrate in the arterial system of blood vessels. And when combined with a carbon molecule or ion, it turns into a carbon-ferrous hydrate, which brings carbon dioxide back to the alveoli by the venous blood system through the venous capillaries (Figure 3).

This compound, like the oxygen molecule, provides a high electron affinity energy of 1.12eV per atom. When this concept of the delivery of oxygen from the inhaled air to the place of destruction or synthesis of chemical compounds with the participation of oxygen, where the corresponding energy conditions for the accumulation of magnetic-electric forces of the surrounding electromagnetic

field are formed, a clear cause-and-effect relationship of metabolic processes is revealed. At the same time, it can be argued that when oxygen is delivered through the lung system in an amount determined by the metabolic rate, it is not necessary to saturate the human body with additional oxygen. But in order to increase the level of efficiency of metabolic processes, in the case of failures in the internal and external system of vital activity, the introduction of additional amounts of hydrogen and oxygen elements is required. However, it is worth mentioning that the human body performs the processes of the body saturation with additional oxygen and hydrogen by the synthesis of compounds including these elements during the metabolism of nutrients supplied by the digestive organs.

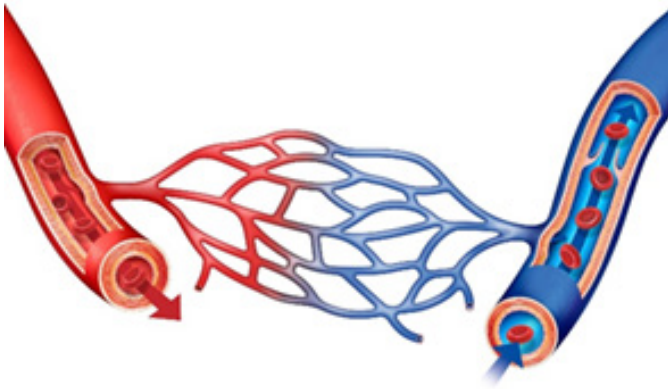

Figure 3: Oxygen-ferrous and carbon-ferrous hydrates.

The majority of chemical reactions in the cells of the human body occur in aqueous solutions or during decomposition of water molecules. It is known that it requires two hydrogen molecules and one oxygen molecule to synthesize two water molecules. Assume that all the incoming oxygen in the end of all chemical reactions is spent on the formation of a renewed blood aqueous solution through the synthesis of water. Then the molecular balance of synthesis of renewable blood aqueous solution will be as follows:

$2.0x10^{21}$ O2 molecules + $2.7x10^{24}$ 2 H_2 molecules = $1.6x10^{24}$ $2H_2O$ molecules

Oxygen is received from the lungs through breathing, but hydrogen in the amount of $2.7x10^{24}$ molecules must be produced in the process of metabolism during ionization of water molecules. In the blood aqueous flow, the process of inducing the electrical potential necessary to break hydrogen bonds of electric potential can occur by implementing for the water molecule the resonant circuit theory, developed by Dr. Stanley Meyer. Meyer uses an external inductance, which forms an oscillatory circuit with the cell capacitance, to create a parallel resonant circuit allowing the accumulation of the energies of electromagnetic radiation quanta with a gradual transfer into the internal energy of an organized water structure. This energy will be accumulated by it unless it reaches the hydrogen bonding energy, which is 500times greater than the energy of the electromagnetic field in the molecule of water. Once this value is achieved, the hydrogen bond is broken and the molecular structure of water deteriorates. The presence and principal action of such a Meyer cell is observed in the structure of separate elements of the cardiovascular system of blood aqueous flow, where conditions for the resonance of frequencies between the increasing value of the external magnetic field strength and the electric potential of quasi-dipoles are formed. This biological oscillatory circuit, when it is necessary to destroy a water molecule and ionize hydrogen and oxygen for the synthesis of chemical compounds intended by metabolism, sets the required frequency of the process, thus accomplishing the work of the Meyer cell in the human body. Due to the resonance of water molecules, conditions for their splitting into hydrogen and oxygen are created, resulting in a higher rate of energy difference during the synthesis of molecules and in a more efficient and stable metabolic process in the blood aqueous solution. The jump time of the ionization and synthesis processes is about 10-12seconds. The effect of an external magnetic field on the water molecule atoms, in the direction of its magnetic activation, consists in the ionization of hydrogen atoms of water molecules under the action of a magnetic field. During decomposition of some water molecules into hydrogen ions the blood aqueous solution is saturated, partially, with gaseous hydrogen, H^+_2, which remains in dissolved concentrations without diffusion, since it is located in a space limited by blood vessels, and besides, water is enriched with negatively charged OH- ions, which results in normalization of the pH parameter due to its increase. It should be noted that H+2 is rather unstable and immediately connects the missing electron, which falls into its energy zone in the de Broglie wave of the hydrogen atom.

The scientists of the Kuban State Agrarian University were the first to explain the mechanism of water molecules ionization in a magnetic field through the energy of the state of a moving electron. They offered the following concept: *"The influence of the external field on the hydrogen atoms of the water molecule is performed through its interaction with the electrons of the atoms under the action of the Lorentz force. When there is no magnetic field, the electron is affected by the electric force of attraction by the nucleus, which plays the role of the centripetal force. In a magnetic field, the electron is affected by the Lorentz force, directed opposite to the attractive force of the nucleus and the induced force of interaction between the*

vector of the strength of the magnetic field with the charge of the moving electron, playing the role of centrifugal force. The rotation of an electron along a stable circular orbital occurs when the centrifugal and centripetal forces are equal and is empirically expressed by the following formula:

$$E_{kin.} = ½ E_{Coul}$$

E_{kin} is the kinetic energy of an electron ECoul is the energy of the Coulomb interaction of the Lorentz forces.

This condition (stable rotation of the electron around the proton) is realized exactly if per one turn of an electron there is radiation-absorption of one photon with energy equal to E_{Couf}. The electron rotation is followed by the emission of photons in the form of energy equal to the Coulomb interaction of an electron and a proton. This provides, along with the equality of centrifugal and centripetal forces (or the stable preservation of the body of the "coat" of the probabilistic location of electrons in the spiral linear-axial movement of blood flow molecules through the vessels) and the stability of hydrogen atoms during their movement along the transport vessels, without ionization, to the place of metabolism.

From the standpoint of energy dynamics,it is more relevant to speak not about the force, but about the momentum of Lorentz forces, which do the work to bring the particles and the very molecules in the flow and the very flow of blood aqueous solution into rotational motion. The EMF (electromotive forces) are affected by physical, physicochemical and thermodynamic processes that are expressed through their gradients; concentration gradients of system components, and gradients or pressure differences, such as in electrolyte solutions, as well as gradients of systems of inhomogeneous temperature field. The concept of temperature gradient on the segment (line) of change in the energy content of electron-proton bonding allows us to calculate specific values of performance indicators of a biological system (e.g., blood aqueous flow). The temperature gradient serves as an indication that the biological system has a certain level of quantum transformations, and its numerical value reflects the intensity of quantum transformations.

FM Kanarev [1] calculated the gradient of energy change in the surrounding volume of the magnetic field with a temperature change of 1 degree Celsius: the energy of photons absorbed by electrons of a water molecule at 0°C, E0 = 0.116875eV, and the energy of photons forming a temperature of 1°C, E1 = 0.117239 eV. Then the difference of photon energies, at which the temperature changes by 1°C, will be equal to E1-E0 = 0.00036eV. Simultaneously, the minimum temperature gradient on the line of change in the value of bonding energy between protons of hydrogen atoms in the cluster of two water molecules at a temperature change of 1°C was calculated, which equals to 0.03°C. Correspondingly, by changing the temperature value of the blood water flow we can manipulate the velocity of its movement and induce the magneto-electrical energy necessary for ionization of the water molecules in order to correct the metabolic disturbances.

Based on the concept of *FM Kanarev* [1], let's consider the processes that are induced in the blood water flow as a result of increasing the temperature from 36.5°C to 37.5°C. At increasing the temperature by 1°C, there will be an increase in the binding energy of the electron and proton in the hydrogen atom, due to the fact that each of the 4 axial electrons of each water molecule in the cluster will approach the nucleus of the oxygen atom and will move to a new orbital with a smaller radius and will increase its binding energy with the proton of the oxygen atom nucleus, according to *FM Kanarev* calculations [1], by a value equal to 1.09x10-4eV per a bond. Then the change in the total energy of one liter of the blood aqueous solution will be calculated as follows:

$$E_{37.5}-E_{36.5} = 1.09x10^{4} \times 3.34x10^{25} = 3.674x10^{21} \text{ eV},$$

and the bonding change, or the value of the energy of emission and absorption of photons, in 5 liters of blood will be calculated as follows:

$$E_{5 \text{ liters}} = 3.674x10^{21} \times 5.0 = 1,84x10^{22} \text{ eV}$$

Such transformation of the energy content of the cluster of water molecules results in their decrease in size, which can be represented by the ratio of the electron orbital radius at 36.5°C to the orbital radius at 37.5°C. This calculation will show how the blood aqueous flow will decrease in volume. *That's why when the body temperature (blood water flow) increases simultaneously with a decrease in blood volume, there occurs a densification of its energy-mass (which in medicine is called as blood thickening). The occurrence of water deficiency disrupts the process of synthesis of the blood water solution and metabolism necessary for life-sustaining activity. Therefore, when the body temperature rises it is recommended to inject aqueous solutions.*

Simultaneously, the temperature gradient generates a pressure change gradient (or rather additional vacuum application) in the same line of changes in the bonding energies, which accelerates the rotational-axial blood aqueous flow and excites additional ionization energy. Here we should return to the condition of rotation of the electron around the proton, because when the temperature changes, the speed and energy of emission and absorption of photons changes as well. An increase in the wave energy of photons increases the strength of the Coulomb interaction in the surrounding magnetic field. The kinetic energy of the electron, Ek (centrifugal force) increases and reaches the ionization energy of the hydrogen atom and results in its disintegration. As a result, the water molecule and cluster are broken down one by one, and a synthesis of new compounds begins.

Considering the above, the magnetohydrodynamic gradient of the Lorentz forces momentum is composed of a number of overlapping effects, expressing the relationship of electrical phenomena with non-electrical ones, and the total momentum of these rotation forces performs the work necessary to initiate and fulfil the ionization process of the flow cluster, equal to $2x10^{-18}$ J. The orientational polarization of dielectrics, electrolyte solutions, brought in rotational motion, can be explained by this fact. Considering the above, the evidential theoretical basis of the concept of a vortex spiral-axial and linear movement of the blood aqueous solution flow in the magnetic field of the Earth is formed.

"When the strength of the external magnetic field increases, a force comparable to the magnitude of the action potential of ionization occurs, and the electron detaches from the atomic nucleus. The ionization potential of an electron from a hydrogen atom equals to 13.59eV."

It was observed that to ionize a hydrogen atom, it is necessary to exert work equal to $2x10^{-18}$ *J*. The magnetic field energy per water molecule, which can actually be absorbed by a water molecule in the magnetic field, will equal to $1.9x10^{-25}$ J only, if the magnetic field energy is evenly distributed in the environment. According to V.I. Klassen, it is known that the first maximum of water magnetization corresponds to the magnitude of the magnetic field strength $H = 10^5 A/m$.

"Thus, with an even distribution of the magnetic field energy throughout the volume at a field strength of $H = 10^5$ A/m, each water molecule has only $E = 1.9x10^{-25}$ J, which is 107 times less than it is required for its ionization."

Scientists have proved that despite the molecule's efforts to keep the equilibrium energy state of its energy structure in values of ionization equal to the most probable states of electron orbits, it can stay at any orbit at the level with minimum energy, i.e., closer to the nucleus or at the orbit with maximum energy corresponding to its greatest distance from the nucleus. According to quantum mechanics, the position of an electron in a hydrogen atom is described by a wave function, determining the probability density of the electron in a given region of space at a given moment. The electron, responding to its wave nature, forms within the De Broglie wave length a spherical symmetric "coat" around the proton, in which the orbital location of the electron is quite conditional and determined by a particular probability and depends on various physical causes of the surrounding magnetic field and background radiation (scientists have studied the effect of the spectrum of the background gamma-ray radiation of gamma-quanta energy in the range from 400 to 3,000 keV). Simultaneously, it is necessary to take into consideration that each molecule has its own level of dimensionality where it is maximally stable, as well as a range of dimensionality values within which a molecule can exist without disintegration. At the same time, the magnetic field of the atomic nucleus depends on the influence of changes in the environmental dimensionality, expressed in vortex flows, assembling various ionic structures with different charges. Consequently, at each point in time, there is some fraction of water molecules that require a much lower voltage than 13.6eV for ionization. Scientists have found that if the magnetic field energy is evenly distributed among all atoms or molecules, with $1.9x10^{-25}$ J of energy per molecule, an electric potential equal to $1.18x10^{-6}$eV is enough for the molecule ionization. It has been calculated that molecules that have an ionization potential equal to only $1.18x10^{-6}$eV amount to $1x10^4$ per one m^3. So, accordingly, in 5liters of blood aqueous solution with the potential of the background magnetic field of the Earth and other background radiation of magnetic energy, about 50 molecules are ionized at the same time.

Based on this conclusion, we can deduce that the simultaneous ionization of the blood aqueous solution by means of electron-photon interaction in the potentials of evenly distributed energy in the magnetic field of the environment and background radiation is insignificant and cannot be taken into consideration when calculating the production of the ionization energy of a hydrogen molecule and a water molecule in the process of blood transfer through the blood vessels. For instance: the comparative calculation of the interaction forces of a proton and an electron in a hydrogen atom revealed that the electrostatic force (F_C Coulomb force) is $2.3x10^{39}$ times greater than the gravitational force, and their ratio corresponds to the following ratio:

$$F_C / F_G = 8.2x10^{-8} / 3.6x10^{-47} = 2.3x10^{39}$$

On the basis of the results of experimental and theoretical studies of the effects of electromagnetic fields on water, several important concepts for achieving the level of the value for the magnetic field required for the process of ionization of water molecules and oxygen and hydrogen atoms in the Earth's magnetic field have been designed and presented. First of all, it happens when the body induces the resonance of electromagnetic processes. Responding to *NV Levashov's* theory concerning the anisotropy of space, which continuously changes its dimensionality along different gradients of the dimensionality of the physical phenomenon (in this case, the background magnetic field), the resonance of magnetic processes occurs when the energy of the magnetic field is concentrated in certain parts of space. This is generated under frequency resonance conditions of the electron's flat orbit with the frequency of an additional external magnetic field.

The magnetic moment of an atom placed in a constant and, for a given dimensionality of the space, a homogeneous magnetic field (the magnetic field of the Earth), and directed to the field at a certain angle, will gyrate with the Larmor oscillation frequency (rotation of the axis of the magnetic moment of the atomic nucleus electrons around the magnetic field vector). If the oscillating body is affected by an variable force of the same frequency, then resonance occurs: the oscillating body will draw energy from the source of oscillation. The phenomenon of electron paramagnetic resonance, in the case of circulating aqueous solution through a constant magnetic field, can occur spontaneously without creating an additional variable electromagnetic field, which is generated if there are ions or other charged particles in the circulating blood aqueous solution (in fact,in the electrolyte).

When a blood aqueous solution circulates through a magnetic field under the effect of the Lorentz force, opposite charges (+) - (-) q will begin to move in different directions in a plane perpendicular to the induction vectors and the direction of the water flow velocity. A uniformly accelerated charged flow particle, moving under the effect of the Lorentz force, in a certain time will reach the wall of the vessel through which the blood aqueous solution flows, and will excite the spiral-axial vortex rotation of the flow with linear motion. This uniformly accelerated charged particle is speeded by the Lorentz force to a velocity creating kinetic energy capable of, when in contact with the vessel wall, radiating an electromagnetic wave with energy and a certain frequency. And the electron magnetic moment and its orbit will gyrate with the Larmor's oscilla-

tion frequency under the effect of an external magnetic field. When these frequencies are equal, the phenomenon of resonance and the absorption of the magnetic energy of the electromagnetic wave of a charged particle by the gyrating electron of the atom will occur. The ionization of water molecules can be realized by the order of distribution of oxygen atoms electrons in their cells when the electrons of hydrogen atoms approach them.

In the opinion of the author of modern vortex physics, a researcher from Tomsk University, *Vasily Bukreev* [2], the procession rule is as follows. When a force is applied to a rotating object, it is counteracted by a force in the perpendicular direction, shifting in the direction of rotation (the motion of a spinning top). The blood water flow rotates according to the Benard vortex law in the inner and outer layers along circles of different diameters in the same direction and at the same speed. Gliding friction of these layers occurs and a centripetal force, counteracting rotation, is induced. A directional force forming a precessional shift acts perpendicularly on the inner circle. Simultaneously, a tangential force is formed, which, bringing the layers closer to the flow axis, increases the rotation speed of the inner circle with decreasing radius. Physicists commonly refer to the inner layer as the trunk, and the outer - as the periphery. The law of angular momentum conservation requires that the magnitude of the centripetal force be strictly equal to the magnitude of the centrifugal force, then a stable rotational axial motion of the blood water flow is formed. However, the tangential force of the trunk increases and, accordingly, the kinetic energy of the flow and the electric potential of the water molecules of the vortex "trunk" increase. The effect of precession resonance arises due to the induction of joint fluctuations of the change in Benard forces acting on the blood water flow. Climatic vortexes are characterized by the combination of axial motion precession and rotation resulting in catastrophic destruction. And in our case it results in the ionization and destruction of the water molecule into hydrogen and oxygen.

Kanarev FM [1] has suggested a new theory of the electronic state of a water molecule, based on which three models of molecules are formed: two models (discharged water molecules), on which the Lorentz law is not generated, and the third model, (semi-charged water molecules), which is not efficient enough to bring the water flow into rotation. However, when a water molecule is ionized, a number of ions are also formed: hydroxyl OH^-, hydroxonium, and hydrogen H^+. It is worth mentioning that of all the ions formed as a result of the water ionization, only hydroxyls can create the magneto-hydrodynamic effect of the movement of the blood water flow, since on one end of the hydroxyl axis there is an electron of the oxygen atom, and on the other end there is a proton of the hydrogen atom. Thus, hydroxyl is an ideal link in an electric circuit, electric particles (-q and +q), which form the rotation of the blood water flow in a magnetic field by Lorentz forces. Since these ions form linear cluster-complexes, with positive and negative signs at the ends, they form stable electric charges under the action of an electric current voltage.

ET Kulin [3] and *IO Kulak* [3], scientists from Hayward, USA, developed the scientific concept of the "Ionic theory of the electret state of water" (further, my article will present an interpretation of their idea of the ionic theory of electrets as applied to a new concept of initiating the movement of the blood water flow), providing an evidence base for the molecular mechanism of electret field generation, through which protein molecules carry out vital functioning processes. Scientists have proven that the electret state of water is characterized by the presence of structured water in it, consisting of water clusters, which are liquid crystal conductors and liquid (free) water. Water clusters are associates of water molecules spontaneously formed due to dipole interaction, orientational polarization and hydrogen bonds. A characteristic feature of water clusters is their big dipole moments, which are formed by summing up the values of electric dipole moments of water clusters. The magnitude and direction of the total dipole moment depends on the ratio of the right and left-handed clusters orientations. Due to the ability to be electrically polarized, they make rotations in external electric and magnetic fields as a single flow of the blood aqueous solution. Thus, water clusters have the necessary conditions for the formation of an electret state in them. The electret state is an electrostatic field of generation of the electric charges carried by ion-molecular complexes (IM complexes), consisting of a hydrogen ion (H^+) and a water molecule (H_2O), called a hydroxonium ion, as well as IM-complexes consisting of a hydroxyl ion (HO^-) and a water molecule, called a hydroxide ion. Complex ions are formed in water as a result of its molecules dissociation into hydrogen and hydroxyl ions, i.e., ionization, via absorption of a photon by a water molecule. During the time of about 10^{-13}sec the complexes shift from each other and interacting with stationary water molecules form IM-complexes (hydroxonium ion and hydroxide ion) by hydrogen bonds.

This pair is a dipole, whose poles have opposite electric charges with the amount of electricity equal to $1.6x10^{-19}$ Cb/cm^2 and it generates an electric field at a distance of 0.1nm with a strength equal to 10^9V/m. A dipole, a hydroxonium ion - a hydroxide ion, is called a water quasi-dipole due to a very large amount of electricity at the poles and the presence of mutual attraction between them as in opposite charges. A quasi-dipole, being in a stationary state in a water cluster, generates a constant electric field of a dipole configuration. As a result of the electric interaction between the motion of electric current in the IM complexes (quasi-dipoles) and an external magnetic field, including the Earth's magnetic field, a magnetohydrodynamic effect of the Lorentz forces occurs. When water rotates in a pipe, its warm molecules appear at the inner wall of the pipe and its cold molecules appear at the pipe axis. On cooling, water molecules emit photons, that are absorbed by an electron or proton that they meet on the way and there occurs a process of generation of inertial momentum force, which transforms the linear axial movement of the water molecule by the bound electron. Thus, the photon emission momentum force, which transferred energy to the rotating cluster of masses to maintain the average equilibrium energy of the system (or inertial momentum conservation force) and the force that is circulating the energy of external environment to deform the energy state of blood water flow subjected to implosive rotation. Simultaneously, the linear axial movement of blood water flow is generated by a decrease in pressure ahead of the flow,, firstly related to mechanical processes, i.e., an excess of centripetal

forces (Lorentz forces) over centrifugal forces, as two vortices are formed in the twisted blood flow: a peripheral free vortex and a central (axial) forced vortex, in the body of which the pressure at a point on the flow axis falls in proportion to $V^2/2g$ and there occurs a pressure gradient, increasing toward the center due to the vacuum in the central part of the tube.

At the same time, when the cluster of masses rotates by jet-vortex implosion to the water flow axis, there happens an accumulation of energy, the excess of which, in order to save the average energy of the system, is dumped through quantum transition into dissociation of chemical and atomic bonds in molecules and atoms with disintegration into separate elements and elementary particles. Electrons and atomic nuclei move away from each other, which weakens their internal bonds and facilitates the electron ionization from the hydrogen atom and thus, there is a deflation of the electrical micro space volume, consisting of the so-called "coat", the hydrogen atom, to a volume 10^{15} times smaller than the initial one. The generation of a deep vacuum in the microscopic space of atoms initiates a decrease in pressure in the blood aqueous flow, thereby triggering an acceleration of blood flow. Besides dissociation, a decrease in pressure in the blood flow occurs when a water molecule is synthesized. The oxygen atom in a water molecule decreases in volume when it changes from a gaseous to a liquid state. This happens when the annular electrons go down to lower energy levels (closer to the nucleus). The discharge at the beginning of the flow increases proportionally to the value by which the volume of the molecule decreases.

Implosion is the result of superfluid transfer of water flow by a conical (concave) rotation of the jet narrowing at one quarter of its wavelength, i.e. the motion imitating the motion of atoms along the potentials of a gravitational waveguide. The implosion of the jet generates a mechanical macrovichron (an energy cluster of matter) in the form of a technical antigravity monopole, grains-potentials of the same sign with the Earth's central field and the equally distributed magnetic field of the environment. When interacting with these fields, the macrovihron is repelled from them creating a decrease in blood weight. The particles of the blood cluster are simultaneously twisted away from the walls of the vessels, which contributes to the reduction of the resistance to its motion by internal screwing along the narrowing line of the flow axis. Only the implosion of magnetic energy in the wave node allows a release of the internal energy of atoms and molecules, by injecting grain-potentials into their internal structure (Figure 4).

Figure 4: Centripetal motion.

At certain values of the implosive twisting of the blood jet at a quarter of the wavelength of the narrowing cone (presumably, when the angular velocity of the flow reaches 600-800rpm), there occurs an effect of vortex polarization of water, and blood thickens and accelerates as it leaves the volumetric phase of coherent waves. It is worth mentioning that concentration of additional magnetic field energy combines a number of initiator systems to induce the energy of the ionization state of water molecules in the blood aqueous solution. These factors include both the purely mechanical vortex forces and the resonance phenomena of the wave property of interference and diffraction of photons, protons, electrons, and molecules. And all these forces are internal forces of elementary particles of the water quantum structure, which operates them both as a builder and as a designed construction of organs of a human body and of its metabolism. Water disintegrating into ions and radicals forms an aqua-plasma, which consists of H_2O molecules, H^+ and OH^- ions, and radicals. Aqua-plasma, by definition, is a source of photons, without emission and absorption of which electron ionization and synthesis processes and, accordingly, a set of oscillating-rotating states are impossible, which indicates its rotational-oscillatory dynamism. Thus, due to the resonance, the amplitude of the precession oscillation of the electron increases by 108 times, which is quite sufficient condition for the ionization of the water molecule at the strength of the external magnetic field H = 105A/m. Consequently, the excess energy of the local magnetic field for the performance of ionization will be about 10J. The mechanism of ionization of water molecules in a magnetic field during resonance of electromagnetic processes is described by the following empirical dependence: - the product of the blood vessel radius value by the linear flow rate of the blood aqueous solution is $5.8x10^{-5}m^2/s$. Consequently, the condition of resonance is achieved in blood vessels in which the cross section of the vessel and the linear flow rate of the blood aqueous solution meets the value of the product of the vessel radius in meters by the flow rate in m/s, equal to $5.8x10^{-5}m^2/s$.

Therefore, we can conclude that all water molecules in the volume of blood vessels that meet the requirements of the resonance condition can undergo ionization.

Scientists from Krasnodar, such as *AB Alexandrov* [4], advancing the study of resonance processes, have developed a mechanism of ionization of water molecules in a magnetic field at interference of magnetic coherent waves, which confirms the experiments of Victor Schauberger and theoretical claims of *AA Shadrin* that the moment of atomic transformations of elements of the water structure subjected to implosion helical rotation occurs at the moment of "jet implosion" or inward explosion. When particles of water elements on the operational parts of the path of 1/2 wavelength move from the beam to the node in the compression phase of the sound wave, there occurs the ionization of the water molecule.

Scientists from Krasnodar, for example, *BL Alexandrov* [5], explain this phenomenon as follows. If there are two or more sources of oscillations with the same periods, in the area of superposition of the wave fields from all sources one can observe areas of standing beams and nodes. They can be combined into lines of beams or nodes (places of increase and decrease of the voltage value in the wave line with a change in the external signal). The purpose of this study was to show how many molecules will be ionized due to the background concentration of magnetic energy under the condition of interference (superposition of two coherent waves) of monochromatic (one strictly defined frequency) coherent waves, which create a concentration of magnetic energy in certain areas of space. The condition of inducing magnetohydrodynamic effect is met only by conduction electrons, so it was necessary to find out the concentration of electrons involved in conduction and what energy these electrons will generate to maintain the vortex rotational motion of the blood water flow. Research and calculations of the conductivity electrons distribution showed that only 10^{-11} of the total concentration of electrons participate in conduction. That is, if to consider that the energy of monochromatic coherent waves per water molecule and equal to $3.15x10^{-13}$J will be five-fold higher than that necessary for ionization, then we can suggest that the mechanism of ionization of water molecule in the blood aqueous solution, discovered by scientists, at interference of magnetic coherent waves can induce an artificial zone of influence on the intensity of metabolism in blood vessels designated to treatment. However, the functioning of this mechanism requires detailed study and research and cannot be proposed today for a universal concept of flow.

To reveal blood vessels, which meet the conditions of resonance of electromagnetic processes at ionization of water molecules of the blood aqueous solution and, respectively, the most probable places where metabolism occurs, let's consider quantitative characteristics of all vessels of the human circulatory system (Table 2).

Table 2: Quantitative characteristics of the circulatory system.

Blood vessels	V\(m/s) Blood flow rate	D Mean vessel diameter	N Mean number of branches	P (mm Hg)	L Mean vessel length	T Time of blood flow through the blood vessels	L_0 Total vessel length	$d/2xV=5.8x10^{-5}$ M^2 / s
Aorta	0.45	15.3mm	1	98 97	60cm	1.3	60cm	$3.4x10^{-3}$
Artery	0.4	2.5–8.0.mm	43	97 72	47cm	1.2	20m	Selection of resonance conditions is possible
Arteriola	0.2	37μm	2,100	72 32	6cm	0.3	126m	$5.8x10^{-3}$
Capillaries	0.0001-0.0005	8μm	1.7x109	32 15	1.2cm	12	2,000km	$2.25x10^{-9}$
Small veins	0.05	0.75mm	3,800	15 10	6.6cm	1.3	250m	Selection is possible
Medium and major veins	0.2	2.7mm	73	10-1.3	49cm	2.5	35m	D3/75[10^1 V !.55 m/s 5.8x10--5
Venae cavae	Up to 33.0 m/s	5.0 – 12.0mm	2	-1.3 -2	31.5cm	1	63m	Conditions are not met

As can be seen from the data presented in the table, which were obtained as a result of approximate calculations, in some volumes of terminal arteries and arterioles, as well as terminal and branching veins, it is possible to create conditions for realization of frequency resonance by creating precession with the Larmor oscillation frequency, charged particles of the blood aqueous solution and external magnetic field, induced by the moments of Lorenz forces. Simultaneously, the induced or natural ionic electret state of water clusters manifests itself in the volume of the water flow of blood subject to dissociation. These conditions of blood water flow states result in orderly constant vortex rotation and linear-axial movement of blood through the vessels and initiate opening and closing of the heart valves. The indicated sections of blood vessels provide blood circulation and include 6 components: arterioles,

precapillaries, capillaries, postcapillary venules and arteriolo-venular anastomoses (the junction of hollow organs). Arterioles are the terminal sections of the arterial circulatory system that have resistive functions, i.e., together with precapillaries, they provide the formation of vascular resistance necessary for metabolic time and, consequently, the rate of blood flow, by changing the internal diameter of the vessel.

The structure and capabilities of these nodes of blood vessels give reason to believe that the process of destruction of the blood aqueous solution molecule and its subsequent synthesis with new elements of oxygen, obtained from hemoglobin which is included in the erythrocyte, as well as hydrogen, which is produced by ionization, is possible, in sufficient quantity, only in places where charged particles "jump". That is, in the arterial capillary-venular hemo-microcirculatory bed, which provides metabolism in the vessels of the blood water flow, since the dimensional and speed characteristics of the state and movement of the flow meet the condition of resonance of energy oscillations of interacting elements of the structure of the ionization mechanism of the water blood flow particles. Resistor vessels, arteries, and arterioles accumulate 17% of the blood flow volume, or approx. 0.85 - 0.9liters. Capillaries account for 6% of blood flow or 0.3 - 0.35liters, and the capacitance vessels, venules and veins, account for 57% or 2.85 - 2.9liters of total blood volume. Accordingly, 4.0-4.15liters of blood is constantly recovered in the hemo-microcirculatory bed, in the vessel section, where the condition for the dimensions of the structural elements and the speed of the blood water flow is created corresponding to the product of the diameter by the value of the flow rate equal to $5.8x10^{-5}$ m^2/s. Here, the role of the coordinating system is played by the mechanism of self-targeting of equilibrium state parameters of the elements of all interacting forces and energies of the blood water flow.

The characteristics of the induced blood pressure value must correspond to the resistance forces of the semitendinosus and papillary muscles, adjusted to a certain pressure for opening and closing the valves of the heart and intermediate vessels. The initiator of opening or closing of the valve is the blood water flow itself, which reaches the appropriate pressure during induction of the critical blood volume by synthesis of its water by ionized ions, atoms and molecules of hydrogen, as well as introduced oxygen molecules. If the pressure of the blood water flow reaches the opening pressure of valves, the valve of vessels or heart will open and ionization of electrons and water synthesis for a "slip" (10^{-12}seconds) will be put on hold. It is worth mentioning, that, despite the extremely high rates of processes that occur during blood metabolism, the degree of targeting by the circulatory system and recuperation occurs gradually with the Larmor oscillation frequency of precession resonance, and the value of $5.8x10^{-5}m^2/s$ defines the critical point of ending the high degree of ionization and, therefore, reaching the maximum pressure of blood flow to open the valve. According to scientific research, the line of the beginning of the law of resonance and its "jump" is realized in arterioles and venules at a length of 6cm. Yet, the exact location of this segment in arterioles and venules should be indicated by quantum computers, which will perceive receptors of blood vessels structure by means of appropriate programs.

In order to cure practically all diseases of human body by energetic influence on sections of blood vessels, in which recovery of the blood aqueous solution and metabolism by photon interaction of energies of charged particles bonds (i.e., electrons, protons, atoms and molecules) is carried out, it is necessary to study energetic essence of structure and interaction of elementary particles of human body, corresponding to concepts of modern physics.

In a middle-aged person the systolic pressure in the aorta is 110-125mm Hg, the diastolic pressure is 70 - 80mm Hg. However, it is impossible to diagnose any disorders in individual organs by threshold pressure values since it is formed in the trinity of vessels: arteries, arterioles and capillaries, with the transition to the capillary vessels of the venous system - venules and veins. Therefore, in order to diagnose an individual organ, it is necessary to record the value of pressure in the arteries connecting this organ with the aorta which will result in a more accurate diagnosis of a diseased organ. Blood saturation with necessary substances in the capillary system and veins is of great importance. The angular velocity of blood flow in arterioles is very high, which excites a high intensity of polarization of water molecules and ionization of hydrogen. Electromagnetic fields break down water with the release of three isotopes: hydrogen, carbon, and oxygen. The released hydrogen moves into the spaces free of gravity and pressure in a double spiral motion, gravitates opposite-charged elements and moves in the blood stream through arterioles which are considered to be cranes of the vascular system as the outer membrane of the arterioles merges with the surrounding connective tissue. Due to the high degree of atomic and molecular interactions of the arterial blood and the elements of vital activity secreted by human organs, the blood is saturated with metabolic products. It should be noted that the main processes of the blood polarization and ionization are carried out in the endothelium of arterioles as these cells are oriented along the axis of the vessels and have the highest angular velocity of the flow rotation.

Therefore, due to the high speed of the jet-axial rotation of blood, the pressure in the arterioles gradually decreases and becomes equal to the pressure in the capillaries that allows adsorption and active absorption of metabolic products from the blood in a state of ordered rotational and axial blood motion at an insignificant value of the rotation speed. Decrease in speed and pressure also occurs with the blood distribution from arterioles through the capillaries. This occurs in connection with the flow distribution into many vessels - capillaries. If the area of human arterioles is only $1,000m^2$, then the outer surface of the capillaries is one square kilometer despite the fact that they have very small dimensions: the diameter is 10 microns, and the length is 1mm. It should be noted that the pressure in the blood stream decreases with the transition from the sections of the aortic vessels to the veins, and in the veins the blood pressure reaches a negative value which maintains an ordered directional motion of blood throughout the cardiovascular system as a whole. Timely filling of the heart chambers to the

threshold valve opening pressure is created due to the high angular velocity of the blood flow in the veins. Chemical reactions of the final formation of compounds of metabolites from individual elements isolated in the capillaries simultaneously occur in the venous site due to the high polarization intensity. In this case the water acts as a building material for the particles formed - it is split by the implosion of waveguides from clusters of the molecular and atomic states followed by a fast recombination process with the formation of new elements or their compounds.

As early as 1874, *D Keeley* developed a theory of disintegration of water up to atomic nuclei by ultrasounds. In his writings, he argued: "The sounds generated by vibrating tuning forks, positioned to produce ethereal chords, scattering their tones (composition), penetrate most thoroughly into all substances that fall into the area of their atomic bombardment. In my opinion, the sound, correctly defined, is a disturbance of the anatomical balance, producing the separation of the real anatomical particles, and the substance released in this way, of course, must belong to a certain kind of ethereal current." *EP Blavatskaya* pointed out in her book "The Secret Doctrine" that the secret of *D Keely's* technology included "increasing energy" and the application of "dynaspherical"energy in mechanics. Sound served as the primary impulse of life… From the modern physical concepts point of view the reason of substance splitting is the rotation of the substance cluster as a result of vortex polarization, or spin orientation of the macro mass carrier due to hypersonic micro-rotation. After energy-mass water disintegration, there follows a rapid recombination-deposition process in a mass nuclear plasma with the production of new elements. *AV Vachaev* created the "Energoniva" technology for the production of any chemical elements from water. The human body performs these tasks by internal natural forces, without the use of complex technogenic devices, such as those of *FV Vachaev.*

The production of new recombined elements by water is also achieved by the water unique physicochemical properties, such as high intermolecular recognition (selective binding of molecules to each other by non-covalent chemical interactions), ordering and acquisition of crystal properties in a cell, as well as the appearance in water of short-lived supramolecular formations (clusters) of an isomorphic chain of tetrahedra in quartz, due to which water can acquire dynamic optical activity.

Blood saturation with necessary substances in the capillary system and veins is of great importance. The angular velocity of blood flow in arterioles is very high, which excites a high intensity of polarization of water molecules and ionization of hydrogen. Electromagnetic fields break down water with the release of three isotopes: hydrogen, carbon, and oxygen. The released hydrogen moves into the spaces free of gravity and pressure in a double spiral motion, gravitates opposite-charged elements and moves in the blood stream through arterioles which are considered to be cranes of the vascular system as the outer membrane of the arterioles merges with the surrounding connective tissue. Due to the high degree of atomic and molecular interactions of the arterial blood and the elements of vital activity secreted by human organs, the blood is saturated with metabolic products. It should be noted that the main processes of the blood polarization and ionization are carried out in the endothelium of arterioles as these cells are oriented along the axis of the vessels and have the highest angular velocity of the flow rotation. Therefore, due to the high speed of the jet-axial rotation of blood, the pressure in the arterioles gradually decreases and becomes equal to the pressure in the capillaries that allows adsorption and active absorption of metabolic products from the blood in a state of ordered rotational and axial blood motion at an insignificant value of the rotation speed. Decrease in speed and pressure also occurs with the blood distribution from arterioles through the capillaries. This occurs in connection with the flow distribution into many vessels - capillaries.

If the area of human arterioles is only 1,000m^2, then the outer surface of the capillaries is one square kilometer despite the fact that they have very small dimensions: the diameter is 10microns, and the length is 1 mm. It should be noted that the pressure in the blood stream decreases with the transition from the sections of the aortic vessels to the veins, and in the veins the blood pressure reaches a negative value which maintains an ordered directional motion of blood throughout the cardiovascular system as a whole. Timely filling of the heart chambers to the threshold valve opening pressure is created due to the high angular velocity of the blood flow in the veins. Chemical reactions of the final formation of compounds of metabolites from individual elements isolated in the capillaries simultaneously occur in the venous site due to the high polarization intensity. In this case the water acts as a building material for the particles formed - it is split by the implosion of waveguides from clusters of the molecular and atomic states followed by a fast recombination process with the formation of new elements or their compounds. *AA Shadrin* explains this process from the modern physics perspective in the following way.

A system in an equilibrium state, spending energy to maintain equilibrium, inevitably enters a non-equilibrium state. Then it searches for energy to maintain its equilibrium and splits its own internal energy stored in the cluster of matter. The splitting of its own matter results in its disintegration. Starting with low binding energies there occurs the temperature state of substances, i.e. there comes cooling of the substance, followed by molecular and atomic disintegration. Water is split by implosion of energy in the form of grain-potentials, followed by a rapid recombination-deposition process in a mass nuclear-meson plasma with the production of new elements. This process is conducted by triads of vortex fields of different mixture of grain-potentials and is in equilibrium with its external fields from these grain-potentials. The erythrocyte aqueous solution, by splitting its own substance, results in its disintegration, up to energies and elementary particles.

Among chemical elements there are some stable elements that cannot spontaneously disintegrate, as well as unstable ones, whose lifetime is measured in fractions of a nanosecond. The degree of stability of all atoms determines their most important property, i.e. electron affinity. This concept indicates the level of energy that is released or absorbed in the process of bonding an electron to an atom, converting it into a negative ion. The hydrogen atom has a high ability to accept electrons to transform into a negative ion and

release energy to replenish the ionization energy of the system. It is important to note that when an excess electron is attracted, the radius of the resulting H- ion will increase, which lowers the pressure in the blood flow in this section of the blood vessel. For example: the diameter of the hydrogen atom, dh = 1.0nm, and the diameter of the two-electron shell of the hydride ion H- is 2.742nm, this releases 66.9kJ/mol of free energy ($H^{++}e$ -H--66.9kJ/mol), and reduces the pressure by more than 2.5times. The reason for pathological changes in the biological chain is a change in the equilibrium atomic-molecular energy-mass state of the human body. It is known that a particular value of temperature at a given point of space is determined by the maximum set of photons. Consequently, thermal energy and temperature in a certain volume of space are formed by photons as a result of changes in the values of their electromagnetic fields. And vice versa, when the energy content of a photon is changed, its wavelength changes, the mass or material density of the photon's substance increases or decreases.

It is necessary to understand that the fractal-wave structure of a photon realizes its dualism of quantum states, i.e., any force is pressure, and pressure is specific energy, regardless of its origin. Accordingly, energy density is force and, simultaneously, energy is mass. This definition also applies to the same physical phenomenon as the pressure of an electromagnetic wave. Since the photon has mass and electromagnetic origin, it is well recognized that the mass of the photon is formed by its electromagnetic fields. Therefore, at the moment of emission of each photon, the electron loses the energy that has been transformed in the electron as energy - mass, i.e., $6x10^{-16}$eV. Thus, the absorption and emission of a photon by an electron change its physical characteristics. As the temperature changes, the photon mass increases or decreases, the density of its electromagnetic fields increases or decreases, and the electromagnetic forces compressing or expanding the photon increase or decrease. Here we consider the processes occurring in the water molecule of the blood aqueous flow. It is also known that in the case of forced ionization of a hydrogen atom (it happens basically in the composition of molecules) there is a stripping of an electron and a decrease in the radius of the formed H^+ ion by 10^{15} times. Therefore, the hydrogen atom, with a sufficient degree of certainty, can be considered not only an element of the blood water flow generating its movement, but also a regulator of the values of the parameters of this movement in some areas and zones of blood vessels and, including the stimulator of opening or closing of heart valves.

Scientists still need to study, develop and calculate a mathematical model of volumetric and energetic co-measurement of the extent to which all types of ionization of hydrogen atoms by photon energy recuperation affect the state of the blood water flow. The human organism should contain the target parameters settings for the greatest efficiency of production the elements of normal life activity by means of metabolism of substances and energies, which obey the law of conservation of the average energy of the biological cluster equilibrium energy-mass.

It follows from the above that the results of the stability of the blood aqueous flow state depend on the level of values of the parameters of spontaneous and forced ionization of hydrogen atoms, which depend on the degree of affinity to the electron at a given time and the magnetic field strength in the resonance and electronic state of the cluster. Along with this, the hydride ion H^- is an intermediate link in the hydrogenation of organic compounds in the multiple bond exchange system, as well as in the dehydrogenation of hydrocarbons. For example: hydrogenation (reduction) of glucose to produce sorbitol for further metabolism. The hydride ion H- is a donor of an electron pair in the donor-acceptor mechanism of the covalent chemical bond formation, which is formed by the overlapping of electron clouds pair located on the outer shell of the atom. This bond is immensely strong due to the fact that it belongs at the same time to both bonded atoms.

Glucose is one of the main representatives of carbohydrates, which was chosen by nature to "initiate" the metabolic processes in the human body as part of the blood water flow structure. Since in glucose (as in all carbohydrates) the hydrogen-oxygen ratio is the same as in the water molecule, all considered properties of glucose aqueous solutions follow the laws of photon ionization of hydrogen as well as dissociation and synthesis of water with formation of electrically charged hydroxyls and quasi-dipoles. And the processes of glucose reduction and oxidation are excited by the energies of the surrounding electromagnetic field of inertial radiation pulses and absorption of photons by electrons of hydrogen and oxygen ions. That's why the intramolecular aqueous solution of glucose undergoes the synthesis of molecules in the flow of the blood aqueous solution anywhere in the blood vessels meeting the conditions of water molecules ionization and synthesis. Modern scientists have researched in details, profoundly studied and described the state of the chemical elements and compounds transformation processes during metabolism. However, they describe the movement of these processes as a consequence of the impersonal efforts of the properties of the involvement of interacting elements in chemical reactions. It necessary to mention, that all processes take place in aqueous solutions or in water flows, in which movement is possible only at a pressure difference or is initiated by the magneto-hydrodynamic effect of Lorentz forces. In its turn, in the molecular compounds themselves, the carrier of the substance is usually water, which can be not observed in the experiments because the synthesis (destruction) of the molecule occurs at a rate of 10^{-12} seconds, and the production happens within the interval of 10^{-13} seconds and, therefore, only during the time interval of electret effect all biological processes of metabolism occur. Therefore, the experimental data may not adequately characterize the causes of motion of processes of the donor-acceptor interactions type. From the modern physics perspective, all chemical reactions occur as a result of the emission and absorption of a sum of elementary photons that trigger all biological reactions up to the holographic representation of the living organisms' morphology. So the motion of chemical elements in reactions is generated by the inertial force impulse of the emission and absorption of photons via the motion of electrons, which have the capabilities and properties of a De Broglie wave.

The molar mass of glucose equals to 180.16g/mol, so the amount of glucose is synthesized in the blood aqueous solution is as follows:

$M_{glucose} = 27.09x10^{21} \times 180.16 / 6.02x10^{23} = 8.11$ grams

The blood water flow volume of an adult should constantly contain approximately 6 grams of glucose. Thus, the process of hydrogen ionization, and, accordingly, the destruction and synthesis of $20.0x10^{21}$ glucose molecules must constantly occur, as due to one-time saturations with glucose during food intake, the body is not able to perform the metabolism necessary for vital activity. This creates the similar situation as that of oxygen supply via respiration. In a free (dissolved) state in blood there is only 0.03% oxygen of the total oxygen capacity of blood, so the remaining oxygen remains in the blood water flow in the form of oxygen atoms in water molecules and is included in the processes of synthesis during metabolism as a result of the destruction of water molecules, which is induced by hydrogen ionization. The glucose molecule, just like the water molecule, degrades when hydrogen is ionized by breaking down its bonds with oxygen. And the synthesis of a glucose molecule, according to its values of the released energy, corresponds to the construction of bonds in a water molecule, if it is measured by the number of such bonds in water and glucose. During the synthesis of one mole of water, there released 285.8 kJ or $285.8 \times 1,000/6.02x10^{23} \times 1.6x10^{-19} = 2.96$ eV, while during the synthesis of one mole of glucose there released 2,820 kJ or $2,820 \times 1,000/6.02x10^{23} \times 1.6x10^{-19} = 29.77$eV.

That is why, if a water molecule has one bond and a glucose molecule has ten bonds, the number of absorbed and emitted photons with the energy of the relic range, per one bond, is the same. This fact proves that the glucose molecule can exist in the blood water flow or in the state of hydrate or ionic molecular complexes, which exist in the electret state with the duration of formation time equal to 10^{-13} seconds and destruction time equal to 10^{-12} seconds. The lifespan of this physical formation determines the time of the electret state duration or the time of generation required for the metabolic process induced by photon ionization of hydrogen atoms, the energy state of the glucose molecule. The duration of the electric field existence in organic tissue determines the bio-electret effect or the ability of living tissues to be in a state of nonequilibrium electrical polarization. Thus, the lifespan of a glucose molecule, as well as the lifespan of all chemical elements involved in metabolism is equal to the time of "jumping" from destruction to synthesis, which differ from each other by one order of emission and absorption of photons time.

It should be taken into consideration that the technogenic impact of electromagnetic fields on the metabolic system is possible only by creating an instrument of synchronization of electromagnetic, uniformly distributed Earth's fields and resonance mechanism of ionization of hydrogen atoms in water molecule during interference of magnetic coherent waves in conditions of stochastic resonance, excited by information signal from outside the system with electromagnetic field of human. German physicist Winfried Otto Schumann proved that space - Earth - ionosphere concentrates electromagnetic waves formed by the resonance of electromagnetic effects of atmospheric electrical systems into stochastic energy wave fields. These formations represent an external natural environment of uniformly distributed electromagnetic fields, which generates, in tandem with the resonant energies of the system's magnetic coherent waves, the energy required for ionization of hydrogen atoms and, consequently, water molecules of the blood water flow during metabolism. It is necessary to note that for penetration of electromagnetic wave to the place of ionization of water molecules of blood flow there are no irresistible obstacles, as, the depth of electromagnetic wave penetration through the skin at its frequency equal to 8Hz and blood conductivity equal to 0.7Siemens/m equals 210meters.

There is synchronization effect in the vital activity of all biological systems and resonant stochastic field, which represents the mechanism of human self-organization, reducing, first of all, the degree of freedom of system development due to interaction with the environment, and secondly, initiating the mechanism of mutual correction of system vital activity disorders, i.e. disease treatment. The synchronization mechanism deals with the so-called self-sustaining periodic oscillators (systems oscillating periodically in time). When the organism functions normally, it is affected by an external periodic stochastic field force with a specific, for a healthy person, amplitude and frequency of the electromagnetic wave, which synchronizes with the indicators of the system and maintains it in this state. When there is a deviation from the standard indicators of human organ (individual system) vital activity, by means of synchronization in phase of the human electromagnetic field there occurs a correction and synchronization with an external source. As the field formed as a result of stochastic resonance has small values of electromagnetic energy, the process of synchronization with the field of a sick person (treatment time) can occupy a long period of time. That is why the synchronization of the dualism of the system and the stochastic field must be resonated by an additional external electromagnetic field, the one of technogenic origin. Thus, we will be able to implement the treatment concept of human diseases by the so-called "torsion fields", which was developed, researched and applied into medical practice by such scientists as *Luc Montagnier, AE Akimov, GA Shipov, VA Sokolova*, etc. Simultaneously, we can complete the cause-and-effect relationship of initial and final interactions of the participants in the construction of the results of concept generation with the concept of the governing role of the treatment process, which is carried out by the synchronizing force of the resonance of the stochastic electromagnetic field.

The concept of stochastic resonance and stochastic synchronization of biological systems and the Earth's energy field represents quite clearly the phenomenon of disease treatment by the internal energy forces of the human body, without the involvement of medicine.

However, the cause-and-effect relationship will not be considered complete unless we put the photon work at the center of all biological processes. All chemical reactions occur mainly as a result of the emission and absorption of elementary photons. *AA Dvornik* [6] wrote: "It is safe to say that photons are the main carriers of energy, particles (atoms and molecules) are the translational points for the photons transfer and the photons generators. The sums of photons

trigger all biological reactions up to the holographic picture of the living organisms morphology."

Vasily Bukreev [2], analyzing the process of nuclear transformations of water in the direction of obtaining various chemical elements from a hydrogen atom, occurring in the "Energoniva" installation made by engineer Vachaev, draw a conclusion that this became possible since water has a structure of para- and ortho-modifications of Benard water vortices. And these vortices are constantly moving, while experiencing a phase transition from ortho- to para-modification and vice versa. Under flow conditions in blood vessels, water vortices draw hydrogen from the water molecules with a torsional force by splitting the water molecule into a hydrogen atom and a hydrogen peroxide molecule. The so-called torsional force is generated as an interaction force of centripetal, centrifugal and tangential rotational forces, which affects a constant change in the electric potential of water molecules, due to the change in rotational speed. Under conditions of a evenly distributed magnetic field, two molecules of hydrogen peroxide combine to form a molecule of H_2O_2, which can immediately split into a hydrogen molecule and an oxygen molecule. This is another way of providing the metabolism with hydrogen and oxygen from the internal processes of the body's vital activity, which can be used in treatment, by intensifying the energetic influence on the pathogenic organ. The para and ortho molecules of hydrogen peroxide O^H exhibit the properties of negatively and positively charged particles, depending on the direction of electrons and positrons rotation in protons and neutrons, and for the surrounding magnetic field these are no longer molecules, but charged particles combined into the sum of electric clusters of ortho and para modification. When para-particles are exposed to an external magnetic field, there occurs the phenomenon of paramagnetic resonance due to the possible coincidence of precession with the frequency of the variable magnetic field and a threshold value of the magnetic field is induced, above which the molecular substance is destroyed.

Simultaneously, in the state of resonance, conditions are created under which the disintegrating para particles OH unite into a new atom with the same para modification under the action of the magnetic field. *AV Vachaev* used these para and ortho hydrogen particles capabilities in his "Energoniva" installation to produce new chemicals. Nature has designed the structure of human blood vessels similar to that of Vacheyev's plasmoid. We shall mention from the design of the installation only the sequential connection of arterioles, capillaries and venules, which features in its dimensions the design of the inlet and outlet cone of the Laval nozzle, creating the opportunity to form Benard vortices. Vachaev's plasmoid represents nothing but a Benard vortex, occurring in flows with opposite direction of motion, having electric current of different direction and located at a calculated distance from each other. Verily, are they not arteries and veins, which are adjacent to each other, with the blood water flow moving through them, being saturated with electricity in opposite directions. There are grounds to assume that the human body has an opportunity to use the effect of Vacheyev's plasmoid to "produce" lacking or necessary for treatment chemical elements by internal forces of the organism.

The experiments of scientists showed that it is possible to isolate components from water including Ag, Au, Pt, Pd, Bi, Ir, Cd, Ru, Te, Os, Sb, etc. These processes were realized in structurally complex reactors for the generation of high-temperature plasma (patent No. 2096846) and sufficiently high pulse discharges of electric current. We see that the same results are achieved at the venule-capillary junction sites when the angular velocity of the blood is shifted from 10,000 to 40rpm and a tapering working cavity-hole is up to 0.1mm. However, the results observed cannot be explained within the framework of standard representations of nuclear physics. At the same time, theoretical physics suggests that the simultaneous decay of primary elements and synthesis of new chemical ones from water is possible in an electric discharge plasma. *AV Vachaev's* studies have revealed that to obtain each target element from water (or from the blood water flow) there is an optimal current density of stabilization of the threshold value of the magnetic field, above which the nuclear reaction of obtaining a new particle can occur. When comparing energy interactions of man-made technogenic devices and capabilities of the human body at the micro-level of energy-mass compaction, it is necessary to take into consideration the relatively high quantum values of acting forces on extremely small objects in millionths of a second. This impact is equivalent to enormous values of energies of man-made devices (for example: the force of impact of hydrogen bomb energy on the macroworld objects).

Principles of regeneration and assimilation of blood in the lungs is of a particular importance in the human circulatory system. The blood volume in the lungs is approximately 450mL which is about 9% of the total blood volume in the entire circulatory system. This volume is divided approximately equally between the pulmonary arteries and veins. The blood volume in the pulmonary capillaries is 70mL. The average value of the lung volume is 3-4L. In case of diseased states, up to 250mL of blood can be squeezed out from the lung circulatory system into the systemic bed that requires the development of a system of additional parameters of the energy state of the lung vascular system to use this reserve for heart surgeries. Based on his studies, Viktor Schauberger showed that low or negative (relative to atmospheric) pressure of the magnetic-electric planetary motion of blood in which centripetal rotation predominates allows for breathing through the lungs. This phenomenon was experimentally discovered in 1908 by Professor Ernst Ferdinand Sauerbruch who recognized that neither breathing nor lung expansion would be possible without a biological vacuum. He wrote, "If there were no vacuum in the pleural fissure, no breath, no unimpeded expansion of the lungs would be possible." The experiments showed that the value by which the pressure in the pleural cavity is lower than the atmospheric (negative pressure) is 4mm Hg at quiet breathing at the end of inspiration and 8 mm Hg at the end of expiration. The pleural cavities are airtight, therefore they are characterized by a constant pressure in them, as well as a constant surface tension of the pleural fluid, which helps the lungs remain in an outspread state and adhere to the walls of the chest cavity. The visceral pleura has double blood supply and receives blood from both the bronchial and pulmonary arteries. There is no air in the

pleural cavity. In a healthy person, 10^{-15} L of pleural fluid are formed and resorbed daily (within 24hours), and 19^{-20} mL remain in the pleural cavity. The supply of fluid occurs in the parietal pleura from the vessels by the intercostal, diaphragmatic arteries of the greater circulation. It should be noted that the pleural fluid, like blood, has the properties of an electrolyte as it contains sodium, potassium, magnesium, calcium and phosphorus in low concentrations allowing to use it as a building material for blood. Under the influence of jet-axial rotation, the aqueous component of the blood is polarized, with the release of hydrogen and hydroxyl atoms, as well as it is ionized with the ions formation. When the blood water loses oxygen (we described this phenomenon earlier), free radicals are released, an immediate change in compaction before the stream occurs and instantaneous movement to the zone of decrease in volume flow and at the same time pressure in the pleura decreases, which is maintained all the time while the pleural fluid is formed and resorbed in the vortex blood flow. Thus, part of the blood is removed from the blood circulation as hydrogen and hydroxyl ions react with organic substances including oxygen which comes with the atmospheric air during breathing. The norm of oxygen delivery is 5-10 mL/min/kg. This amount of oxygen is enough for performing the synthesis of blood water from the polarization and ionization elements which again enters the circulatory system, already enriched with atmospheric oxygen. Pleural fluid is transported by pulmonary lymphatic capillaries to the diaphragmatic part of the lung where it is reabsorbed by the vessels of the lesser circulation in the visceral pleura. It can be affirmed with a strong indication that the lungs and their pleura are like a "factory" for the blood regeneration and production in the human body.

Let us discuss the mass-energy balance of oxygen circulation in the circulatory system. Assuming a normal air consumption rate of 7liters per minute, with an oxygen content of 20.95%, a person will inhale O2 at the rate of $2.4x10^{-2}$L/s. One liter of oxygen contains $2.44x10^{22}$ molecules of oxygen. Consequently, when inhaling 7 liters of atmospheric air per minute, the lungs receive $5.9x10^{20}$ molecules of oxygen per second. It must be taken into account that oxygen molecules are resorbed by hemoglobin in the erythrocytes. One liter of adult blood contains $5x10^{12}$ molecules of erythrocytes, and one erythrocyte contains $4x10^{8}$ molecules of hemoglobin, where, in a bound state with an ion of iron is 4 molecules of oxygen. A total of $3.2x10^{22}$ molecules of oxygen function in the circulatory system during a complete blood cycle, within 27 seconds, and when 0.024 L/sec is inhaled, $1.2x10^{21}$ molecules of O_2 are delivered into the circulatory system. The synthesis of the blood aqueous solution, carried out in the human body, consumes all the incoming oxygen, it also requires hydrogen in the amount of $7.947x10^{23}$ mol/sec. The number of molecules that are involved in the synthesis of blood during one second are shown in the following formula:

$5.856x10^{20}$ mol O_2/sec + $7.947x10^{23}$ mol H_2/sec = $1.6x10^{24}$ mol H_2O/sec.

The data for the calculation were taken according to the experimental values. This formula shows that the amount of oxygen supplied during inhalation of atmospheric air will be sufficient for the synthesis of the blood aqueous solution participating in the body's vital activity. However, approximately $8x10^{23}$ hydrogen molecules per second shall be obtained for the synthesis of blood from metabolic processes, which, as it is known, are conducted by the very synthesis of the blood aqueous solution. But hydrogen is not inhaled in the lungs with atmospheric air and is not resorbed in the blood. The possible concentration of molecular hydrogen in water amounts to only $8.65x10^{-7}$mg/L. The presence of hydrogen in the blood aqueous solution can be explained only by the ability of water to low-temperature transmutation of chemical elements under electromagnetic effects (works of *AV Vachaev and NI Ivanova*). The scheme of technical design developed and tested by them, which realizes the effect of new chemical elements production from water, corresponds to the structure of the vascular section of the junction of arterioles and capillaries. There is also a scientific justification for the theory of hydrogen atom formation by photon impact on the electron-positron pair, which can be generated in an electric field. The electric potentials of the blood electric field in the Earth's magnetic field satisfy the conditions of such processes. It is important to mention that any minor failure in the synthesis process, in the temporal concept of the macroworld, can result in insufficient production of hydrogen by the body and, consequently, insufficient saturation of the blood with oxygen and other hydrogen-bound chemical compounds. Quite often, physicians, rather than perform an additional saturation of blood with hydrogen for additional oxygen production, administer oxygen, violating the established balance of the synthesis energy state. By doing so, they destroy the equilibrium energy of the whole body clusters. The management of blood synthesis is possible only after obtaining knowledge of the energy content of processes at the boundaries of changes in the structural and energetic states of blood vessels by establishing diagnostic parameters.

Russian physicist and mathematician, *EG Yakubovsky* [7] has performed a calculation of the life time of a living organism without fueling the metabolism. He performed a mathematical calculation to investigate the time of reduction of the potential of the cells of a living organism in the electrodynamic condition and the time of reduction of the pressure value of the blood aqueous blood in the absence of recharge in the hydrodynamic condition. It has been revealed that in the electrodynamic condition the recharge means chemical reactions, when food is consumed and the period of existence without recharge is 10days. In the hydrodynamic condition, this period is 100seconds and corresponds to the existence of the organism without oxygen supply. It has been found that the lifetime of a living organism without nutrition is characterized by a 2.7-fold decrease in the voltage of the electromagnetic field in the cell of the blood water flow, since without natural standard ionization the concentration of ions and, accordingly, the energy of electrical oscillations decreases. In the electrodynamic system of an organism, the cell is regarded as a resonator of electro-oscillations of a resonant wave, with a certain standard corpuscular-wave density and, respectively, mass. It has been calculated that the difference between the density of a cell (including the cell of the blood water flow) of a living human organism and the density of a dead human body cell is

10^{-2}g/cm^3. In other words, these indicators of the electromagnetic field voltage of the cell mass density are the boundary of its life and death. So, exactly, only in this part of the human body, in the vessels of the blood water flow, it is necessary to affect the cell by an additional electric charge to restore the electret state of the cell's vital activity. But not to "batter down" the heart as a piece of meat.

It is most likely that there is an interdependent relationship between the electrodynamic and hydrodynamic states of metabolism, since metabolism of substances and energy is the basis of life activity and it involves a major number of systems and regulatory mechanisms, both at the molecular and cellular level. That is why we should not violate the Nature established balance between electrodynamic and hydrodynamic processes, expressed in the supply of oxygen through the respiratory organs and, in addition, as a result of synthesis of the blood aqueous solution in the process of metabolism.

In order to stabilize the circulatory system, it is often necessary to stimulate the metabolic processes in the blood. It requires affecting the synthesis processes by invariant ionization of electrons, which is induced by absorption and emission of photons. Given the number of water, oxygen, and hydrogen molecules, we can calculate the energy that must be radiated to absorb the photons and break down the bonds of the molecules elements. It is necessary to induce the process of destruction and synthesis of water molecule by either local directed or general irradiation with relic photons (a suggestion by *FM Kanarev* [1]. Photons have both corpuscular and wave properties, so they can penetrate into the blood system through the human body, and the energy of relic photons corresponds to the conditions of absorption by electrons of the water molecule. To develop a mathematical model for operating photon energy effects it is necessary to establish new units of energy potentials of healthy and sick states of synthesis of molecules in the blood aqueous solution, which can be calculated from the ratio of the number of participating molecules of absorbed and released energy.

FV Kanarev [1] calculated the energy balance of the synthesis processes for oxygen, hydrogen, and water molecules. By dividing the value of the destruction energy of oxygen, hydrogen and water molecules, as well as the values of the synthesis energy of these molecules by the number of molecules participating in the synthesis of new metabolic elements, it is possible to determine the unit of energy input or output per unit time of one cycle. For example, to destroy mechanically (by vortexing the blood) all hydrogen atoms involved in the process within one second it requires the following:

9.06 eV x 7.947x10^{23}mol H_2/s =7.2 x 10^{24}eV=1.15 x 10^6 Ws (watt seconds) = 0.32 kWh (kilowatt hour)

As it is known, the De Broglie wavelength for electron, proton, atom and negative hydrogen ion is slightly, but still larger in size than their diameters, so these elements have all wave properties and, being in the wave state due to diffraction and interference, have the ability to penetrate all biological membranes and connect with electrons of any particles by absorbing-emitting photons, which carry and induce the energy of connection in this pair. As a result of such absorption-emission, the electron will receive an impulse from the photon and instantly revive the inertial force of the impulse, which it will transfer to its "partner". Such a repetitive phenomenon will create an electrical circuit between electrons, which will be transported by photons, since they are the main carriers of energy, because there are no elements in nature not corresponding to the of energy-mass concept. Thus, the strength of the photon radiation pulse, or the inertial force of maintaining the equilibrium of the momentum, which created an energy bond between the electrons of a hydrogen atom or a hydrogen atom and the electrons of any other molecules, is just a hydrogen bond. *It is logical to state that there can be only wave connections between biological entities in a wave state*.

The human body, on average, contains about 55 - 70% of water, so the physical and chemical processes taking place in the water fields of the human body, fully characterize the homeostasis or the ability to self-regulate the relative constancy of the internal environment of the organism and, among other things, the ability to establish the balance, lost as a result of a diseases. Water is composed of a liquid component (liquid water) and solid associations of water molecules called water clusters. According to the definition of the discovery formula, "New ionic theory of electrets" presented by *ET Kulin* [3] (Hayward, USA) in his work, published on 29.06.2018: water clusters are nanoscale associates (association of simple molecules) of water molecules that contain a positive or negative electric charge, or are electrically neutral. An important characteristic feature of liquid water is its ability to spontaneously dissociate, this process is also referred to as self-ionization or autoprotolysis. This is a result of the ability of the water molecule to break up into two ions: hydrogen cation (H^+) and hydroxyl anion (HO^-) to form water clusters, which are conductors of electric current because they generate an electric field. A characteristic feature of water clusters is the induction of large electric dipole moments. The value and direction of the total electric dipole moment, first of all, depends on the anisotropy of the medium (for example, the value of the electrolyte density index), and the ratio of water molecules with ortho and para modification of hydrogen molecules in dipole clusters. These ion-molecular complexes, H^+* H2O (hydronium ion) and HO^-* H_2O (hydroxide ion), form quasi-dipoles in the structure of the water flow. Following consequently the process of formation there occurs a process of their destruction. These processes are due to the ions recombination: hydroxide ion and hydronium ion. The formation time of the hydronium ion and hydroxide ion is 10^{-13}s.

The Maxwellian relaxation time of the free charge of the quasi-dipole is estimated at 10^{-5}-10^{-9}s. The prevalence of the quasi-dipoles formation over their destruction is a necessary condition for the water cluster to generate, without time limitation, an electric field with an intensity from 10^5 to 10^9V/m. Thanks to this, the ionic dipole exhibits the characteristic property of the substance's electret state. Taking these facts into consideration, we can conclude that the degree of electret state of the human organism water com-

position (including blood water flow), determines the degree of hemostasis or self-organization ability to maintain relative constancy of the organism internal environment in the established normal vital activity, as well as the ability to restore the lost balance by recombination of ion-molecular complexes of quasi-dipoles.

However, it is important to mention that the hemostasis level depends on the number of dissociated water molecules and, consequently, the number of ions that have been subject to recombination, as the value of this parameter affects the level of energy capacity of the electret state of quasi-dipoles to regulate the hemostasis capacity. This process is carried out by inducing the required value of the electrostatic field strength and the duration of its generation, in order to ionize hydrogen molecules and release hydrogen ions by breaking the hydrogen bonds holding them. To maintain normal vital activity, the nature stipulates that under conditions of a magnetic field, when the energy of an external magnetic field including the magnetic field of the planet Earth, is evenly distributed over approximately 550,000,000 non-dissociated water molecules, only one molecule dissociates. $6x10^{10}$ molecules are dissociated in $1mm^3$ of water. Accordingly, $6x10^{10}x10^6 = 6x10^{16}$of H_2O molecules are dissociated in 1liter of water. If there are $3.34x10^{25}$ H_2O molecules in one liter of water, then the value of $6x10^{16}$, as a percentage of the total number of molecules, will be equal to $2x10^{-7}$ % or two thousandths of the total amount of H_2O molecules in 1 liter of water, and in five liters of blood in a human body, in terms of volume, is slightly more. This level of dissociation is able to provide normative vital activity and metabolism, but it is not sufficient to affect the hemostasis of the lost balance or induced imbalance. Scientists of the Kuban State University B.L. Aleksandrov, *AB Aleksandrov* [4], when investigating the mechanism of water molecules ionization in a magnetic field of a natural background, with an even distribution of field energy, calculated the number of water molecules in one m3 of water, which can undergo spontaneous ionization without additional energy consumption, that is, in an equilibrium state of vital activity of the human body and with a uniform energy distribution of the magnetic field in space. The calculation have shown that, at the strength of the natural magnetic field $H = 10^5$ A/m, each water molecule has an electric charge with a value equal to only $1.9x10^{-25}$ J, which is 107times less than it is required for its ionization. However, under the influence of the harmonic oscillator there is a concentration of magnetic energy, in a certain part of water, to the necessary level of ionization of some of the molecules. The above analysis has revealed that if the magnetic field energy is evenly distributed in the surrounding energy-mass space, only a small fraction of molecules out of the total number, can reach a state of ionization and, consequently, hemostasis of deviations from the normal metabolism, not planned by nature. For instance, when the concentration of water molecules is 3.34×10^{29} $1/m^3$, $1m^3$ may contain 1 x 104 of H2O molecules, in which the ionization potential is equal to the value of the magnetic field of the surrounding space, which allows ionization.

ET Kulin [3], while analyzing the process of electrets formation, wrote: "Between the moment of formation and the moment of death of the cation-anion pair in the ionic quasi-dipole there is a time during which the hydroxonium cation converges with the hydroxyl hydrate anion and, in doing so, the generation of an electric and magnetic field takes place. This time, which is calculated by the Maxwellian free charge relaxation equation, has a value equal to $2x10^{-5}$ seconds. Consequently, two hundred thousand cation-anion pairs per second are formed and perished in an ion dipole within a second." Accordingly, when 200,000 cationic pairs are formed and perished in an ion dipole within one second, a normal metabolic process occurs by means of metabolism. This number of recombination operations provides only the vital activity of the biological system, which is in the "ideal" state of the metabolism. The dissociation of water molecules is reversible, i.e., H^+ and OH^- ions again form a water molecule.

Scientists have proved that the final destruction of an atom (in particular, the hydrogen atom) produces elements of the primeval content of gravi-electromagnetic energy-mass, namely, the electron and proton, which in turn is not an elementary particle but a compound of positrons. A positron differs from the electron only in the direction of axial motion and the direction of rotation and, therefore, by moving opposite to the electron, induces a corresponding characteristic of the charge, namely a positive charge in the magnetic field. Therefore, a proton in the composition of positrons and an electron, meeting each other after the restoration of the original state of energy-mass, combine into a hydrogen atom, forming themselves in Benard vortices into a hydrogen molecule of ortho or para modification, which corresponds to the state of the so-called "living water". According to *Vasily Bukreev*, when taking a medicine, it is not the medicines themselves healing us but the structure that water takes in their presence. In a special way, the chemical substances of which the drugs are composed, contribute, under certain conditions corresponding to a given disease (the lost equilibrium of the constancy of the internal environment in the organism) to inducing equilibrium concentrations of steam and ortho hydrogen modifications of the human physiological fluid, i.e., the volume of content: para - 25% and ortho -75%. Therefore, setting the equilibrium concentration of para and ortho modification of the physiological body fluid solution, including the blood water flow, is the final stage of homeostasis. However, as proved by scientists who have investigated the teleportation of DNA from aqueous solutions by irradiation with an electromagnetic wave, the phantom effect of a structure teleportation is possible without taking a drug inside the body. It is enough to dissolve chemical elements in water and put the container for a certain time next to a sick person and irradiate it with an electromagnetic wave of IR photons, then the necessary structure of water will be induced in his body and will work during the recombination of hydrogen ion-molecular complexes. Scientific research of the phantom effect of DNA was carried out by the Russian scientist *V Poponin, Dr Cleve Baxter*, and scientists Glen Rein and Rolin McCarthy. Luc Montagnier, Nobel laureate, and his French, Italian, and German colleagues have conducted successful experiments in teleporting oncogenic virus DNA molecules.

Doctor of physico-mathematical sciences *AA Shadrin* [8] explains the realization of "phantom" energy-mass reconstruction in water from the position of modern physics: "Due to the medium

excited with IR photons, light and acoustic photons are generated. The movement of an acoustic or sound wave excites an acoustic and magnetoelectric effect, which contributes to the mechanical deformation of the medium (its density, temperature, magnetization, etc.) in the direction where the hologram is to be formed. Acoustical and optical effects are used to visualize or receive numerical information, the physical phenomenon of "teleportation" of energy mass, due to the fact that the sound wave creates a vortex-type current transfer of energy and the initial state of the cluster of matter. Thus, a photo-acoustic spectrum of the transferred formation in the environment of the phantom construction can be obtained." In addition to the physical concept of *AA Shadrin*, it is necessary to take into account that in order to induce the transfer energy, an electrostatic field is required (a type of matter that interacts between electrically charged particles), which has the strength and direction of the force action necessary for the transfer of energy-mass. The modern theory of the hydrogen and the water molecule structure, which is represented by ortho and para modification of their dynamic state, describes these atomic-molecular formations as Benard vortices. And these vortices during the movement form a torsion force, which propagates strictly in the direction of movement of its internal flow of electrons and there are no obstacles for it. It is quite obvious that it is the power of conservation of equilibrium momentum emission of infrared photons by electrons, a pair of modifications of hydrogen molecules, which are responsible in nature for generating the structure of "living water". Therefore, penetrating, like De Broglie wave, through barriers enclosing human body, into physiological liquid photons are absorbed by electrons of ion-molecular complexes and, simultaneously, an inertial force of impulse impact on harmonic oscillator is radiated in the direction of pointing frequency of the "healthy" state fluctuations of quantum structure of human molecular clusters. Harmful bacteria and viruses, which have chemical and dynamic parameters of their structure and movement that differ from the primeval ones, also undergo recombination and, breaking down into separate primordial elements, are combined into teleportable complexes. Certainly, for fruitful achievement of this goal, it is necessary to fulfill conditions of set theory, when sufficient number of quantum "tiny volumes", planned properties for full realization of the same properties of the whole is achieved.

It is important to mention that the hemostasis level depends on the number of dissociated water molecules and, consequently, the number of ions that have been subject to recombination, as the value of this parameter affects the level of energy capacity of the electret state of quasi-dipoles to regulate the hemostasis capacity. This process is carried out by inducing the required value of the electrostatic field strength and the duration of its generation, in order to ionize hydrogen molecules and release hydrogen ions by breaking the hydrogen bonds holding them. To maintain normal vital activity, the nature stipulates that under conditions of a magnetic field, when the energy of an external magnetic field including the magnetic field of the planet Earth, is evenly distributed over approximately 550,000,000 non-dissociated water molecules, only one molecule dissociates. $6x10^{10}$ molecules are dissociated in $1mm^3$ of water. Accordingly, $6x10^{10}x10^6 = 6x10^{16}$ of H_2O molecules are dissociated in 1 liter of water. If there are $3.34x10^{25}$ H_2O molecules in one liter of water, then the value of $6x10^{16}$, as a percentage of the total number of molecules, will be equal to $2x10^{-7}$% or two thousandths of the total amount of H_2O molecules in 1liter of water, and in five liters of blood in a human body, in terms of volume, is slightly more. This level of dissociation is able to provide normative vital activity and metabolism, but it is not sufficient to affect the hemostasis of the lost balance or induced imbalance.

Therefore, as it has been noted above, it should be taken into account that, per water molecules, only two thousandths of the body's physiological fluid volume, including blood water flow, undergoes recombination, being renewed under the influence of the harmonic oscillator of the stochastic magnetic and electric field of the planet "Earth", by inducing natural resonances of electric currents of hydrogen ions ionization.

Thus, with sufficient certainty, it can be stated that for ionization and recombination of hydrogen ions and, consequently, hemostasis of biological objects in a state of significant loss of equilibrium, (disease), other ways of magnetic treatment and ionization of water molecules in a magnetic field should be considered in order to use high energy reserves of the recombination mechanism, which can be provided by formation and destruction of ion-molecule hydrates during dissociation of water molecules. For instance, of technogenic origin.

The energy resistance of water molecules to ionization depends on the fractal state of the structure of hydrogen molecules composing the water molecule. That is, it depends on the concentrations of the ortho and para states of its molecules. Normal hydrogen (protium) consists of 75% ortho-hydrogen and 25% parahydrogen. Due to the spin structure of nuclei (the direction of vortex rotations of protons and electrons), the magnetic moment of ortho-hydrogen is always greater than zero, and the minimum torque is equal to 1, which ensures the difference in the formation of these molecules and their energy stability during ionization. When hydrogen atoms with parallel spins (ortho-hydrogen) of electrons approach each other, the energy of the system gradually increases, which prevents the formation of a molecule. When atoms with antiparallel spins (parahydrogen) of electrons approach each other, the energy of the system decreases, and the formation of a stable molecule is possible at this minimum energy value. Thus, a hydrogen molecule can exist only with an antiparallel orientation of its electrons spins. It is important for us that only 25% of hydrogen atoms (in the para-hydrogen state) can be synthesized into a hydrogen molecule for further synthesis into a water molecule. The rest of the atoms are destroyed into H^+ and H^- ions and with a transition time of 10^{12}s, by attracting an electron to a free orbital by a proton, they are synthesized into a new hydrogen atom. Thus, it can be concluded that ortho-hydrogen molecules are donors of ion-molecular complexes (hydroxonium ions), which are involved in the generation of an electrostatic field, i.e. a source of Lorentz forces. Therefore, we open with this statement another important physical role of hydrogen in the mechanism of vital functioning of the human body. At the same time, the "secret" of hydrogen atoms and molecules creation is revealed due to the recuperation of free protons, which are released

from the atoms of other elements, during their synthesis, and electrons, which are extremely abundant in the ionization region of charged blood particles.

Responding to the law of pairwise opposite existence of the Nature, quantum mechanics also recognized that on the change of scales of biological processes of vital activity of human organism, accelerating or slowing them down, there is a basic influence of formation of fractals of the blood water flow structure of para-H_2O and ortho-H_2O biological molecules. According to the concepts of quantum mechanics, water molecules with antiparallel nuclear magnets are called para.

H_2O, while ortho-H_2O has parallel nuclear magnets. The difference between these water molecules lies not only in the specific internal structure, but also, in the dynamics of movement. The former appears in a state in which the molecule does not rotate (rotational quantum number is zero). Ortho, on the other hand, has no such condition, it is always "rotating". This results in the fact that para-water molecules keep the structural and physical state, for example, the "small volumes" of the blood water flow, in the current state, and ortho-water at the rate of - 10^{-13} seconds destroys its structure, thereby renewing the blood water flow with the original chemical elements. These processes are initiated by para or ortho Benard vortices, whose dynamics and structure are formed from para or ortho hydrogen molecules. Therefore, water molecules, subjecting to the requirements set by the Benard vortex, acquire the structure, physical properties and dynamics of para and ortho modifications. Scientists assume that a change in the ortho/para ratio of water entering a biological system should lead to a change in the degree of hydration of biological structures, which in its turn results in a change in their biological activity. Thus, stimulation of the process of spin conversion of para- and ortho water molecules, due to the "reincarnation" of Benard vortices from para to ortho modifications, should lead to a change in the scale of biological processes in the direction of the structure of the primordial elements of the human organism.

In order to use in calculations the concept of transportation of metabolic elements formed in various human organs, it is necessary to accept the statement that all molecular chemical elements, which are generated in the places of their extraction from the substances absorbed by the human body, in the form of molecular complexes, are transported by the blood water flow into the volume of arterioles and venules, to the places of probable occurrence of the resonance effect of precession of Larmor frequencies and high-performance ionization of electrons. This implies that metabolism occurs in two stages, i.e. the first is primary, preparatory, forming chemical elements through the breakdown of molecules entering the "working" human organs (for example: stomach, liver, lungs, kidneys) participating in oxidative processes by free oxygen molecules brought by iron ions in hemoglobin molecules. These processes occur in venous capillaries with the transportation of free molecules prepared for ionization into venules. A minor level of ionization from a uniformly distributed external magnetic field is also possible in capillaries, which allows to influence individual hydrogen bonds in the molecules involved in reactions with the release of hydrogen ions, free hydrogen and free oxygen. As it was discussed above, this is caused by the ability of the water molecule to disintegrate (dissociate) into two ions, which are conductors of electric current in the blood solution, these are the hydroxonium ion (formed by the constant "jumping" of the hydrogen ion from a water molecule to another) and the hydroxide ion. The duration of the hydronium ions formation is within the order of $10^{-13}s$, and the "transition" of H^+ occurs within a time interval of $10^{-12}s$. Therefore, time intervals of formation and skipping of ions differ from each other by an order of magnitude, and this gives reason to argue that the electret state of ions, associated with the preservation of long-term energy generation, has the goal of maintaining the equilibrium state of the energy system of interaction of the elements of metabolism (this property of electrets was "by intuition" used by academician *OA Kazakov* in his apparatus of hydrogen production). During this time, a hydrogen atom is broken down into ions and synthesized back into a hydrogen atom. All chemical compounds that participate in metabolism are in the state of aqueous solutions and are constantly subjected to processes of destruction of their constituent elementary parts (molecules, atoms, and nuclei) by, as described earlier, dissociation and ionization, followed by synthesis or "jumping" of ions and electrons through absorption and emission of photons. The quasi-dipole formed as a result of dissociation of water molecules retains its constituent hydroxonium ion and hydroxide ion in the stationary position of energy interaction by hydrogen bonds. When these bonds are broken, the ions in question are brought closer together due to the presence of opposite electric charges and an electrostatic field, the strength of which equals $10^9 V/m$. When there is enough proximity for the ions in question to "jump", their recombination, absorption of photon energy by the electron, and its transition from the hydroxide ion to the hydroxonium ion take place.

All chemical compounds that participate in metabolism are in the state of aqueous solutions and are constantly subjected to processes of destruction of their constituent elementary parts (molecules, atoms, and nuclei) by dissociation and ionization, followed by synthesis or "jumping" of ions and electrons through absorption and emission of photons. The results of dissociation of water molecules and recombination of ions explain the formation of additional volumes of water and hydrogen molecules in the blood aqueous blood to replace those used in the process of metabolism and which are compensated only by the reactions performed by the human internal organs. It is necessary to mention that during metabolism, along with visible chemical processes there are electromagnetic microdipole interactions in the bio-electret field of cells. In the water cluster in the process of water dissociation the formation of electrically charged dipoles and microdipoles and their annihilation are going on continuously. The dipoles are generated by the interaction of hydroxonium ions and hydroxide ions during their recombination. As a result of recombination, the hydrogen ion bonds with the hydroxyl ion and a water molecule are formed. This releases two water molecules that are associatively bound to these ions. Consequently, the ionization of these ions generates three water mole-

cules, and the process is described by the following equation. This process is referred to as *molenization*.

$\{H+. H_2O + HO-. H_2O = H_2O (H+ + HO^{-}) \text{ and } 2H_2O\}$

From this equation, it becomes clear how water and hydrogen are reproduced in the blood water flow without attracting these elements from outside of the body, as it occurs in the case of oxygen attracted from the environment. Thus, in the water cluster in the process of water dissociation there are continuous processes of formation of quasi-dipoles and their destruction, with release of water and free hydrogen. In total, $3.2x10^{22}$ molecules of oxygen are constantly functioning in the metabolic processes of the blood water flow, and $2.0x10^{21}$ molecules are supplied through the lungs to compensate for its consumption. The missing hydrogen in the amount of $2.7x10^{24}$ molecules and $1.6x10^{24}$ molecules of water are produced by recombination of hydrogen ions throughout the entire volume of the blood water flow, as well as in sections of blood vessels meeting the requirements of the condition of resonance of the amplitude of the precession oscillation of the electron. For example, meeting the first condition, it can be roughly calculated that with a degree of water dissociation (a) equal to $1.8x10^{-9}$ and, with H^+ and OH^- ions concentration equal to 1.008^{-14}, the number of ions in 5 liters of water flow of blood will be:

$n = N \times a = 5 \times 3.34x10^{25} \times 1.8x10^{-9} = 3.1x10^{17}$ ions H^+ and OH^-

Where: N is the total number of molecules in solution; a is the degree of water dissociation

Accordingly, during the quasi-dipoles recombination in the solution, approximately 1018 of H2O molecules are formed. *ET Kulin* [3] conducted a study of the "Electret state of water". He proved that the presence of an external component of the bioelectret field of a living cell of the human body and, including the blood water flow, allows to generate a ponderomotive force, which is able to move along the longitudinal component of the field strength of microparticles. He argues that the bioelectret field is an electrostatic field that has inherent pondermotive action, i.e., forceful remote action on electrically charged bodies in accordance with Coulomb's law. The source of the electret field of water in cells, according to the ionic theory of *ET Kulin* [3], is nanoelectrons, orderly arranged in it, i.e. the superposition of their fields. These structures continuously generate a strong electrostatic field due to the continuous formation of ionic dipoles in them. The interaction of these electric fields initiates their continuous motion, rotation and axial movement, which determines the physical basis of vital activity of the cells of the human body due to the appropriate movement of molecules. It has been proved that the main driving force of this mechanism is the bio electret field. Meanwhile, the sub motor forces arising from the interaction of bio electret fields affect not only intracellular motion, but also the motion of particles located at a considerable distance (on the scale of the cell) from the cell itself. It is quite probable that the bio electret field at the microlevel of the blood water flow compaction initiates its beginning of movement (i.e. starts the process of vortex spiral-axial movement of the blood water flow). *ET Kulin* [3] claims that the stopping of intracellular motion, provided that the bio electret voltage value index decreases below the "normal" vital activity index established by Nature, means the cessation of cell vital activity and indicates its death. That is why at stopping the movement of the water flow it is necessary to create technogenic conditions for renewal of the bio electret state of cells, their vital activity in motion, and not to "kill" the heart body by electric discharges, which, structurally, does not have a tool to initiate the movement [9-18].

Once again, it is necessary to remind that it is high time for Modern Academic Perspectives to pay attention to studying and research of the Human organism on the quantum level of energy-mass compaction, on that level of its structure, on which all processes of vital activity are initiated, and also to correlate cause and effect.

The concept of the physical theory of the blood motion in the human cardiovascular system, based on the physical and chemical capabilities of the jet-axial implosive rotation of the blood water flow which is initiated by the rotation of the electric current ions in stochastic model of the Earth's magnetic field, allows us to explain the root cause of many phenomena occurring in the human body.

I hope the time will come when everyone has a passport specifying the data on the normative state of the energy indicators of all organs involved in life. And for the disease diagnostics, automatic scanning will be enough in the special medical units the field energy influences of which will bring the body to a state meeting the health indicators in the passport.

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Conflict of Interest

None.

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