The Principle of Recursive Genome Function: Quantum Biophysical Semeiotics clinical and experimental evidences

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ABSTRACT

This paper introduces the main aspects of Quantum Biophysical Semeiotics (QBS), an advanced medical discipline which studies and interprets the signals of the body in order to detect and diagnose human diseases. QBS develops according to a multidisciplinary approach that involves chemistry and biology, genetics and neuroscience, chaos theory and quantum physics. It is based on the method of auscultatory percussion, through which by means of the common stethoscope, it is possible to listen to the messages that the body gives us when appropriately stimulated. These stimuli are used to induce a consistent behavior - typical of dissipative systems far from equilibrium as defined by Prigogine and comparable to the behavior of plasmas studied by Bohm - in precise and well defined biological body's systems, thus giving local qualitative information on the state of health or disease, whether potential, that is not yet evident by usual clinical trial, effective or even in chronic phase. The 'Quantum Biophysical Semeiotics' provides a very detailed case study based on the duration, intensity and latency time of the reflexes, which are the central elements of all the diagnostics, on the basis of which it is possible to say that the presence of deterministic chaos, as measured by the fractal dimension, is an indicator of physiological state of the investigated biological system. This is always accompanied by the quantum aspect of non-local reality, simultaneous and synchronic, parallel to the local one (where there is waste of energy in space-time). According to QBS, mit-DNA is mainly responsible for cell respiration in biological systems, and the genetic alteration of mit-DNA affects mitochondrial activity. The chance to investigate, indirectly and through bed-side evaluation, mitochondria functionality opens new ways for understanding and facing the initial stages of the pre-clinic process of many pathologies, such as cancer, diabetes and heart diseases, giving original impulses to diagnosis and prevention. QBS clinical and experimental evidences are here analyzed and related to the Principle of Recursive Genome Function introduced by Pellionisz, in order to understand if the genetic alteration of mit-DNA could be reversed, due to the recursive energy, information and communication feedback between DNA, RNA and downstream structures such as tissues, cells, mithocondria and proteins.

INTRODUCTION

Quantum Biophysical Semeiotics

'Quantum Biophysics Semeiotics' - QBS, is a new discipline in medical field, extension of the classical semeiotics with the support of quantum and complexity theories, a scientific approach first described by Stagnaro based on the 'Congenital Acidosic Enzyme-Metabolic Histangiopathy' – CAEMH (Stagnaro, 1985), a unique mitochondrial cytopathy, present at birth and open to medical therapy.

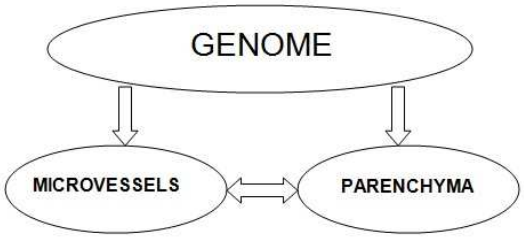
According to QBS, Medical Doctors should be able to evaluate, at the bedside of their patients, simply using the stethoscope and auscultatory percussion of the stomach (Stagnaro, 1978; Stagnaro,

2004a), mitochondria functionality, as well as the functionality of all biological systems. It is now possible, since the moment of birth, to make a diagnosis in order to detect the presence of the 'Inherited Real Risk' of many diseases linked with 'QBS Constitutions' (Stagnaro, 2004c), so that an intelligent prevention strategy can be implemented only on those subjects with 'Inherited Real Risk' (Scheme 3).

According to Stagnaro (2004a), genome's information are transmitted simultaneously both to parenchyma and related micro-vessels, so that mutations in parenchymal cell n-DNA and mit-DNA are the *conditio sine qua non* of the most common human disorders, like diabetes, CAD, and cancer, today epidemics. In fact, all these diseases are based on a particular congenital, functional, mitochondrial cytopathy, mostly transmitted through mother, and defined, as above said, 'Congenital Acidosic Enzyme-Metabolic Histangiopathy' - CAEMH (Caramel et al., 2010d). The contribution of these modifications to the relative pattern of pre-clinical syndrome, always based on genetic or inborn errors – CAEMH - is different from patient to patient and during the disorder's evolution. For instance, in case of diabetic syndrome, insulin-secretion has increased silently during years or decades, before appearing as 'Type 2 Diabetes Mellitus' - T2DM, at the fifth and final stage of its natural history (Stagnaro, 2010a). This pre-clinical stage is not detectable through usual clinical tests, so it is necessary new approaches to explore, such as that introduced by QBS (Stagnaro, 2007b), which through bed-side evaluation, can assess the existence of pre-metabolic syndrome[i], that can last for years or decades, pre-clinical stage of the disease still potential or on evolution to pathology, pre- morbid state or gray area (Stagnaro et al., 1998), so allowing an effective prevention (Scheme 1, Scheme 4).

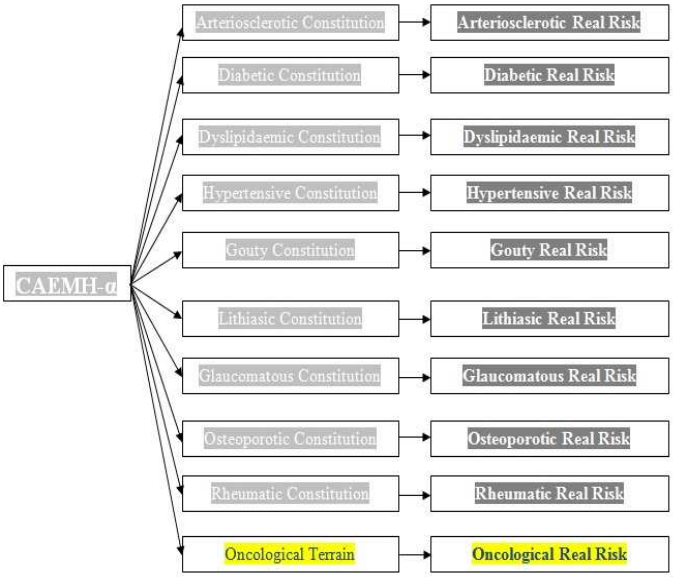
Scheme 1

In addition, parenchymal gene mutations cause local microcirculatory remodeling, which Doctor can evaluate at the bedside in a reliable manner, gathering indirect information on inherited modifications of relative parenchymal cell, since biological system functional modifications are parallel to gene mutation, according to Angiobiopathy theory (Stagnaro, 2008l). The presence of 'intense' CAEMH – termed CAEMH-'alfa' - in a well-defined area (i.e., myocardium) involved by gene mutations in both n-DNA and mit-DNA, is the ground for one or more 'QBS Constitutions' (Stagnaro, 2004c) which could bring about their respective Inherited Real Risks - IRR (Scheme 4), characterized by microcirculatory remodeling, especially intense under environmental risk factors.

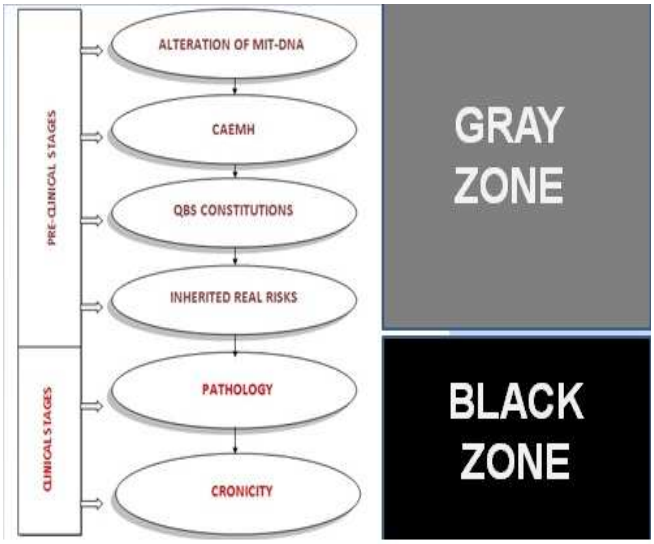


Scheme 2. Genome affects both micro-vessels and parenchyma

In Scheme 2 it is shown that genome affects both micro-vessels and parenchyma, according to Angiobiopathy theory (Stagnaro, 2009a).



Scheme 3



Scheme 4

Investigating the microvessels, whose behavior is typical of dissipative systems far from equilibrium, is a way to get indirect information from the state of health of their respective parenchyma.

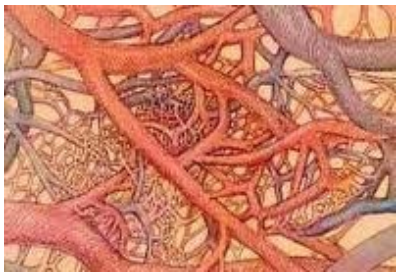


Figure 1

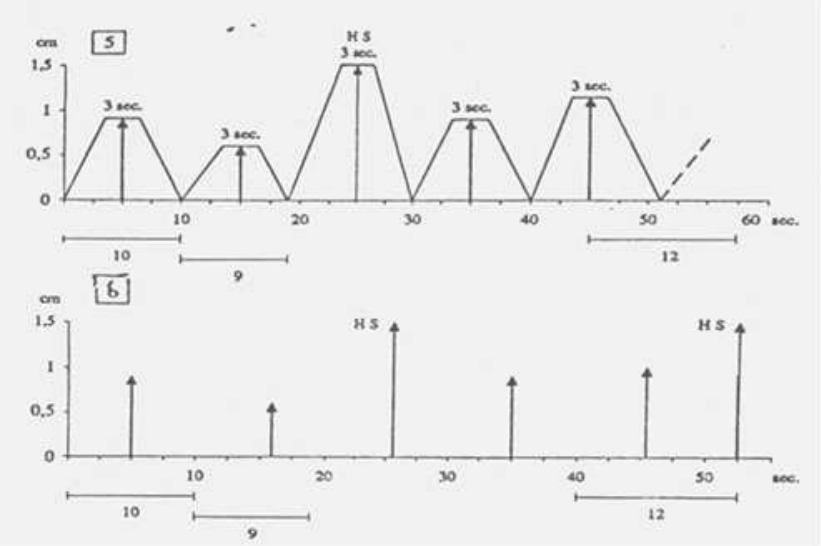
The chaotic dynamics of microvessels (Figure 1) are well known, but it is not so evident how to measure their oscillations and to get consistent qualitative information from their behavior for diagnostic purposes.

STATE OF THE ART

QBS: chaotic aspects

The fractal correspondences of genome (Pellionisz 2008, Dekker 2009) and the chaotic behavior of microvessels' fluctuations (Cavalcanti et al., 1995) are well known, but there is an open question about how to get qualitative information from their behavior, and in order to do it we should take in account some statistic measures of chaos theory. Deterministic chaos has been defined as the 'stochastic or probabilistic behavior occurring in a deterministic system' and its main characteristics are uncertainty and unpredictability, but it is possible to detect and investigate it and to get qualitative information through invariant statistic measures such as LCE, fractal dimension and entropy (Medio, 1992). Lyapunov Characteristic Exponents – LCE – is a statistic measure to test the presence of 'sensitive dependence on initial conditions' – SDIC – in a system. SDIC is at the root of the 'disorderly' behavior of deterministic dynamical systems and it is responsible for their random appearance and unpredictability. Entropy is a measure of the uncertainty in deterministic dynamical systems, or equivalently it is the amount of information we get on the average by making an observation. In particular, the presence of positive entropy indicates that the observation of the system continues to generate information for an arbitrary long interval of time. Consequently, unless the position of the system can be observed with absolute precision, there will forever last uncertainty about its future course, even when the dynamical rule governing the system is known with precision. Zero entropy is interpreted as the absence of chaotic or complex behavior, typical of linear or periodic systems with fixed

point or limit cycle equilibrium, so that they are fully and exactly predictable: no new quality information emerge for an arbitrary long interval of time. Fractal dimension is a no-Euclidean geometric measure of the orbits filling in the phase space under the action of a flow or a map, suitable for fractal objects, characterized by a non-integer dimension. While LCE and entropy are very difficult to detect in biological systems, it is possible to determine the fractal dimension of microvessel dynamics, i.e., of the microcircle, through well defined and refined QBS techniques, such as, i.e., considering the vasomotility and vasomotion diagram, and particularly taking the ratio between the highest spikes – HS (maximum points of the oscillations) and the minimal points of microvessels' fluctuation. The vasomotility and vasomotion diagram is shown in Scheme 6, where reflex's intensity expressed in cm, is on y-axis, and reflex's duration, in seconds, is on x-axis.



Scheme 6

In fractal geometry, the fractal dimension, *D*, is a statistical quantity that gives an indication of how completely a fractal appears to fill space, as one zooms down to finer and finer scales. There are many specific definitions of fractal dimension. We are considering in this paper the Hausdorff (1919) dimension defined as follows:

$$D = \lim_{\epsilon \to 0} \frac{\log N(\epsilon)}{\log \frac{1}{\epsilon}} \qquad (0)$$

where *N(ε)* is the number of self-similar structures of linear size ε needed to cover the whole structure.
At this point the reader should know that it is possible to calculate, in several different ways according to style and difficulty, the QBS fractal dimension (fD) of a deterministic chaotic biological system, such as microvascular one, of any organ, tissue or viscera. Among the many procedures easily achievable at the bedside, the following is truly original: four High Spikes are emerging in a time interval of 120 seconds, dividing the space into four segments; each segment in turn, is further divided into 3 sections by two more "normal" fluctuations. Therefore, it is easy to calculate the fD of the oscillation in Scheme 6,, i.e., the degree of chaos, entropy, or complexity of the figure, which roughly indicates the space occupied by the fluctuation and it is a measure of its complexity:

(1) fD= [Ln(4) / Ln (3)] "f"

where "f", fractal factor, is the ratio maximal oscillation (HS) / minimal oscillation.
In health "f" = 3, as previously reported, because the maximal oscillation corresponds to an intensity of the reflex of cm 1.5, while the minimal oscillation corresponds to an intensity of cm 0.5, so:

(2) "f" = HS/minimal oscillation = 1.5/0.5 = 3

It follows that, physiologically, the fractal dimension is *3 < fD < 4*:

(3) fD = 3 [1.27] = 3.81

In patients in whom a biological system evolves towards any chronic disease there is a lower fractal dimension, i.e., *1 < fD < 3*, and, finally, in chronic situations, i.e., the endocrine pancreas in diabetes, fD is tending to 1, the topological dimension.
QBS is able to provide through the auscultatory percussion of the stomach and by means of chaos theory's tools very useful study cases about several diseases or potential pathologies as, i.e., in the following example about Oncological Terrain and Inherited Real Risk of cancer.

Fractal Dimension	***Equilibrium***	***State of health***
fD = 1	*fix point*	*chronicity – chronic and acute pathology*
1 < fD < 1.9	*limit cycle tending to fix point*	*pathology – tendency to chronicity - State of variable severity of disease evolution*
1.9 ≤ fD < 3	*limit cycle*	*initial implementation of the tendency to disease /potential pathology- i.e. Oncological Terrain (TO) – initial evolution to disease*
3 ≤ fD < 3.81	*limit cycle tending to strange attractor*	*tendency to physiologic condition (only potential phase)*
fD ≥ 3.81	*strange or chaotic attractor*	*Physiologic condition – healthy state*

Table 2

Legend: the fractal dimension (fD) is calculated as the time of the disappearance of gastric aspecific reflex, before the appearance of the next one. It is important to state that the fD is directly related to (d) or inversely (INV) related with:
A) (INV) the local Microcirculatory Functional Reserve – MFR - (vasomotility and vasomotion) and then
B) (d) with the presence, or not, of the local congenital Real Risk;
C) (d) with the latency time of gastric aspecific reflex and then with tissue pH;
D) (d) with the duration of the gastric aspecific reflex

The fractal dimension (Table 2) is an universal measure, independent of the investigated parenchyma, informing the physician about the health condition of the visited patient.

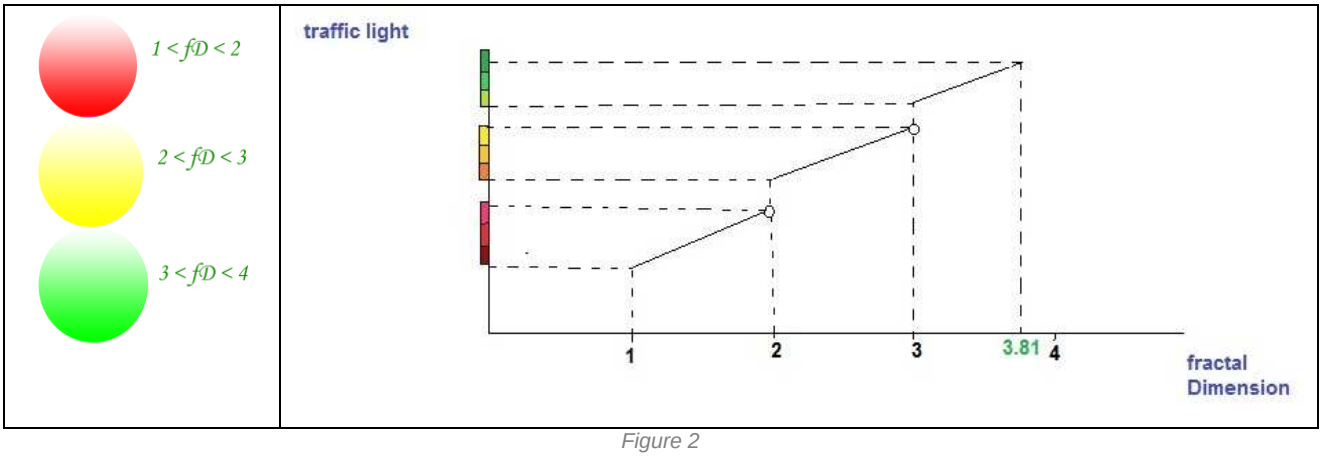


Figure 2

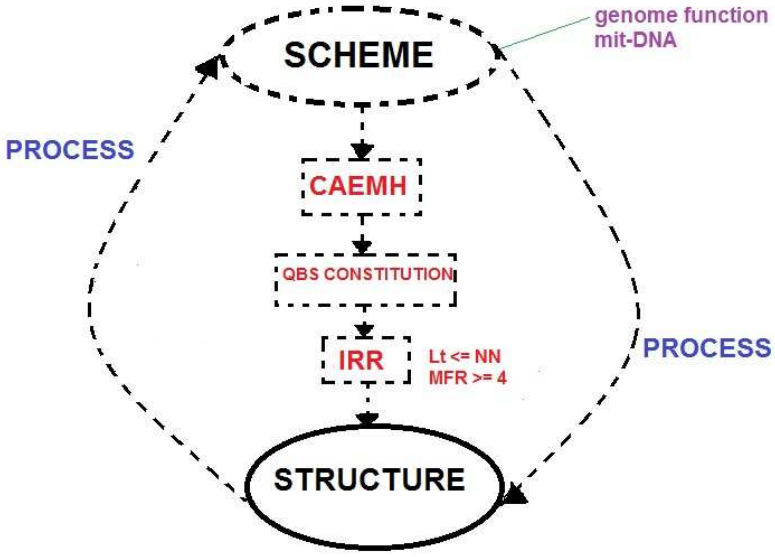
The traffic lights (Figure 2) show in an easy and practical way how to interpret this statistical measure: if fD is more than 3, then this is a signal of health (green light), while a fD less than 3 and more than 2 denotes a potential risk of a pathology (yellow light), and the red light evidences the overt disease. The deterministic chaos is a complex order typical of dissipative systems (Prigogine, 1967) denoted by several qualitative characteristics such as non-linearity, sensitive dependence on initial conditions, unpredictability and uncertainty. While the equilibrium in linear and periodic systems are respectively the fix point and the limit cycle, in chaotic systems we found a new equilibrium called strange attractor.

Figure 3

The strange or chaotic attractor (Figure 3) has got very interesting properties which are fundamental for living biological systems such as flexibility, adaptive, feedback and learning dynamics.

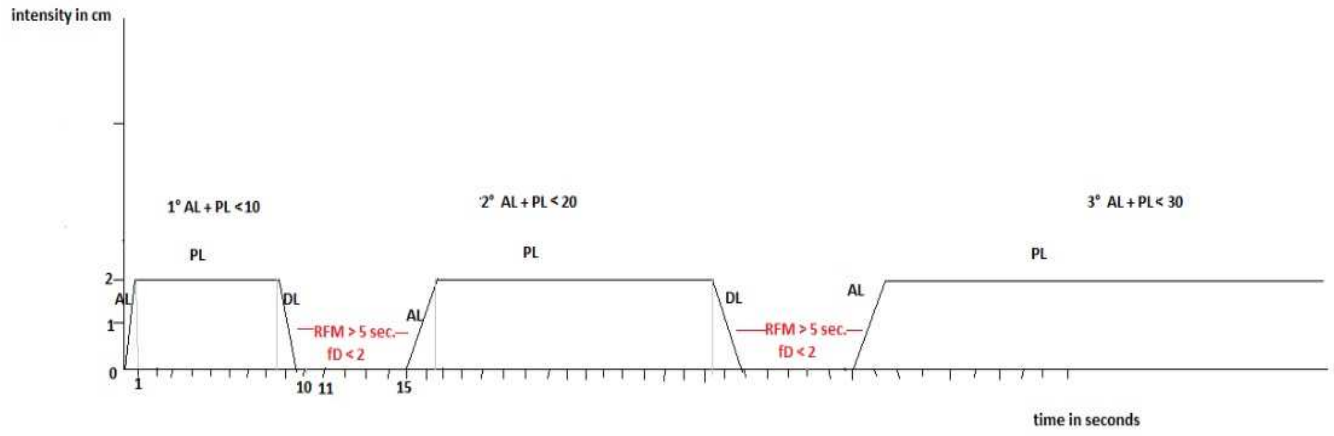
"In the human body there is deterministic chaos that is not disorder, but a higher order in physiology. Only in the pathology there is a lower order: the measure of the first order is an equilibrium called strange attractor, while the measure of the second one is called fixed point. In case of the fixed point equilibrium the biological systems are linear, but when sufficient energy is introduced in them and they are properly stimulated, they show the characteristic behavior of non-linear dynamical systems far from equilibrium (dissipative). Chaos requires enough energy to activate dissipative mechanisms, and life is the trajectory of an attractor: from a strange attractor to a fixed point, passing through the limit cycle. The main task of the doctor is to recognize promptly the various moments of the trajectory of the patient's life (in all and each of its biological systems), to intervene rapidly with an appropriate therapy, useful and effective to reverse the dangerous direction of the trajectory toward irreversibility." (Stagnaro, personal communication).

While fractal dimension is a geometrical measure of chaotic complexity, entropy is a measure of the rate of uncertainty of chaotic dynamics, or similarly, the rate of quality information variation. As entropy is bigger than zero, this is a signal of deterministic chaos, while zero entropy denotes a system whose dynamics are not able to give additional qualitative information in time spending, such as fixed point and limit cycle equilibrium, typical of potential pathologies and diseases.

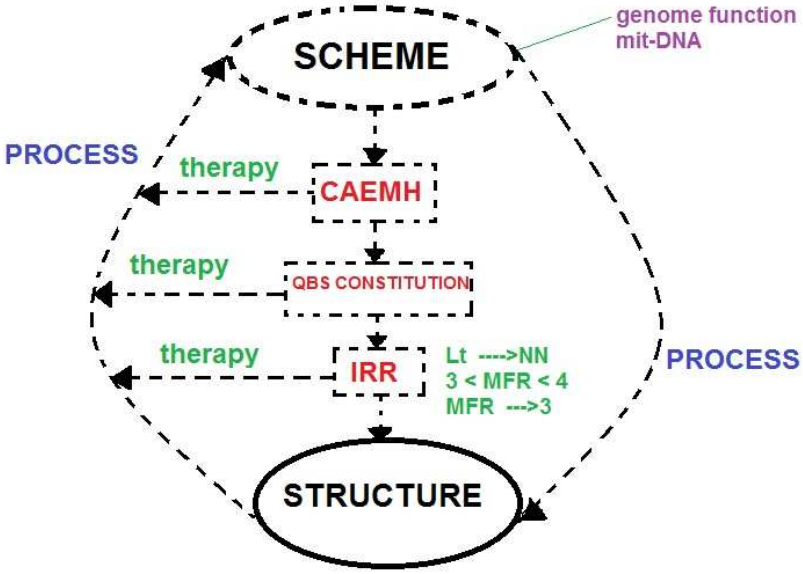


Scheme 7

In pre-pathological stages (Scheme4, gray zone), an altered mit-DNA provokes CAEMH, and then 'QBS Constitutions' ad Inherited Real Risk of the disease. In this case, generally, the 'Latency time', Lt, is ≤ of NN – Normal value in physiological situations - while fD < 3 (yellow traffic light) and MFR ≥ 4 (Scheme 7). In this case the patient is at Real Risk of the disease. If he/she does not begin a proper preventive therapy, the pathology can occur. In case of disease we observe a lower fractal Dimension, fD < 2, and the inversely correlated MFR >5, which corresponds to the disappearing time between one reflex and the next one, more than normal because microcirculatory activation needs of more rest in suffering states (tissue acidosis). Lt is surely < NN (Scheme 8).

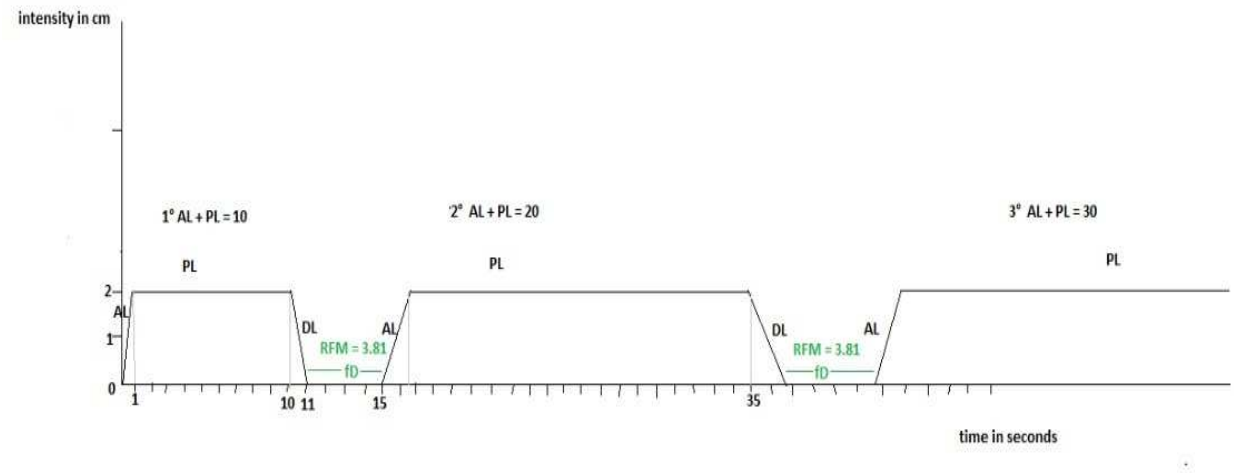


Scheme 8



Scheme 9

Under certain preventive therapy treatments on cells and tissues in order to improve tissue oxygenation and mitochondrial respiration, we can observe that Lt turns to Normal values, and MFR is more than 3 and less than 4, time range of physiological states. This means that IRR, 'QBS Constitutions' and CAEMH are still present, but the Real Risk of disease is just residual, i.e., there is no risk of disease, provided there is a continuative prevention (Scheme 9). In Scheme 10 we can see that MFR – disappearing reflex time – goes down to the physiological value of 3.81, the same one of fractal Dimension (green traffic light), and Lt = NN.



Scheme 10

QBS: quantum aspects

Energy & Information and non-locality in bio-systems

All events in nature belong to a particular form of different codified energy transmissions, so that the total energy cannot be created or destroyed. Manzelli argues that 'Information' is a kind of a virtual 'Energy' as a pure qualitative entity, and 'Energy Information' (EI) is a part of the total energy–matter transformation. Since life system is based on the communication system, DNA functioning cannot only be seen as a storage of genetic information. We can consider DNA/RNA dynamic system as an 'Energy Information' (EI) catalyst (Manzelli, 2009) able to transmit and receive bio-physical quantum signals to and from the proteins in the living cells. DNA can be thought of as an "antenna" transmitting nonlocal information through 'gene quantum signals by resonance'.
The variation of the sum of all the transformations of energy, Vibration Energy (EV), codified Energy like Matter (EM) and Information Energy (EI) must always be equal to zero at any time.

- (EM + EV + EI) = K
- Δ (EM + EV + EI) = 0

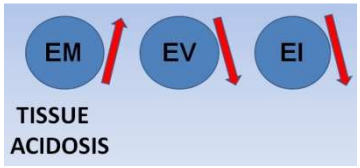


Figure 4 - EM and Tissue acidosis

For example, if there is tissue acidosis, we can observe that EM increases, parallel to a decrease of EV, and consequently of EI, in the same proportion. Tissue acidosis is a signal of potential pathology (pre-metabolic syndrome) or of disease, so it needs to act to diminish the pH, i.e., improving tissue oxygenation and mitochondrial respiration. In the figure, we can see that if we improve tissue oxygenation EV grows up, together with EI, parallel to the decrease of EM, i.e., lowering tissue acidosis.

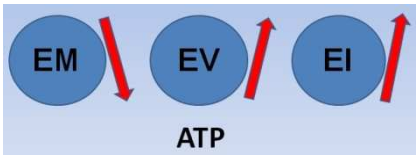
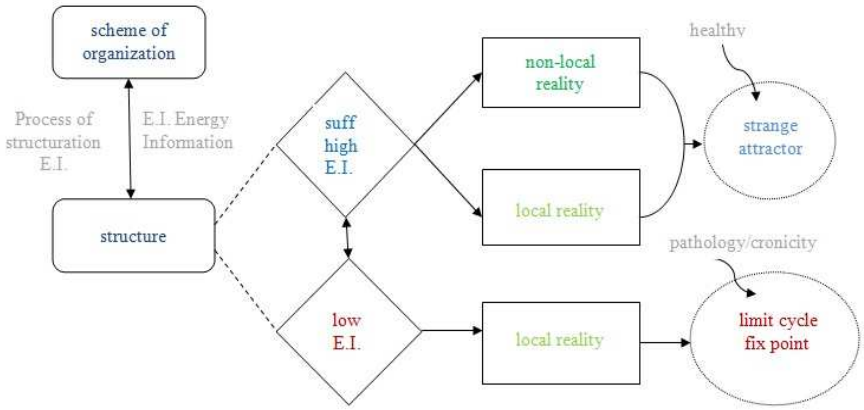


Figure 5. ATP and mitochondria

Autopoiesis and EI

In biology, Varela et al. (1974) proposed the theory of autopoiesis, useful to understand the connection between organization and structures in living systems. An autopoietic system, as described by Maturana and Varela, is based on a scheme of autopoietic organization through a process of structuring which can lead to different structures. A recent work (Davia, 2006) connects autopoiesis, fractals, catalysis and dynamic systems. The autopoietic organization is conservative and always acts on itself: self-production, self-regulation, self-referentiality, recursion, circularity. The scheme of organization works relentlessly to achieve the autopoiesis through a continuous process of structuring, generating dissipative structures with non-linear dynamics (Prigogine, 1967). It has been verified and tested in biological systems the hypothesis of:

- the correlation between nonlocal reality and deterministic chaos;
- the co-presence of local reality and non-local reality in physiological states;
- a sufficient high amount of information energy (EI) as catalytic process to maintain no-locality in the autopoiesis (Scheme 14).



Scheme 14 – EI, chaos, non-locality and Autopoiesis

In the autopoietic living biological systems (i.e., nervous system, immune system), if there were a disease, the autopoiesis would still function. The organization would remain intact, stable, continuous, always on, since it is a conservative system, and if it were not so, the structure and the system would disintegrate, life itself would disappear! In macro-interacting biological systems there is a "mind" synthesis of an autopoietic system that is based on a composite unit (i.e., PNEI - psycho-neuro-endocrine-immune system). If the system were fully healthy, there would actually be a non-local reality (parallel to the local reality) - simultaneity and synchronicity - and the presence of deterministic chaos (chaotic or strange attractor). If there were a disease, the autopoiesis would still be present, but the non-local reality and the correlated strange attractor equilibrium, corroborating the presence of deterministic chaos, would disappear so that we should observe just limit cycle equilibrium in the case of pathology, and fixed points in case of chronicity. The presence of just the local reality is a consequence of the reduction of EV and EI, but with proportional increase of EM.

An autopoietic dissipative structure, always acts satisfying (or trying to meet) the autopoiesis in a simultaneous and synchronous way: there is no cause and effect, but a-causality in a timeless dimension (Capra, 1997). An autopoietic system is autonomous so that it does not depend on time. This is enough to justify the behavior of living autopoietic biological systems, where there is simultaneity and synchronicity, indices of a non-local reality. There is structural coupling between organization (conservative) and structure (dissipative) to always achieve the autopoiesis. For example, if there were a tendency to disease in biological systems (or if there is pathology), the organization, i.e., the PNEI system, would always be orientated towards the survival, materializing and engaging compensatory mechanisms to restore the simultaneity and synchronicity.

Scheme 14 shows that in human bodies there is physiologically in health the co-existence of two different realities: local reality and non-local reality. The non locality disappears if the mitochondrial respiratory activity, and consequently EI, significantly decreases. For example Lory's experiment (Stagnaro 2008b) fails, if a stimulation is applied in a subject, following the Apnea test, with the result of an impaired mitochondrial activity. The compensation takes place because of ‘nuisances’ involving dissipative structural changes, but always subjected to the power system and its inherent conservative autopoietic organization.

The QBS Inherited Real Risk therefore arises at an intermediate stage between the scheme of organization and the structure, a first 'structuration' from the scheme (not observable) on which we can identify it (in case there was) using simple clinical tests at the bed-side, in a vision in which if there were RR, it would be able to tend to a pathology (potential disease), a pathology which, if and when ongoing, would amount to a full 'structuration' of the scheme of organization (i.e., genetic alteration of mit-DNA) to disease. RR, if pathologically evolving, is the slow 'eventing' of disease events. Also considered in itself, whether static, it is a manifestation of the structuring process of the organization. The process is reversible in the sense that, i.e., through the assumption of melatonin-conjugated[ii] improving mitochondrial oxygenation, the administration of energy (i.e., NIR-LED, Near Infra Red light-Led), and proper diet understood in the etymological sense, etc. the RR can become "residual", so that both it shall not disappear nor shall evolve towards the structure.

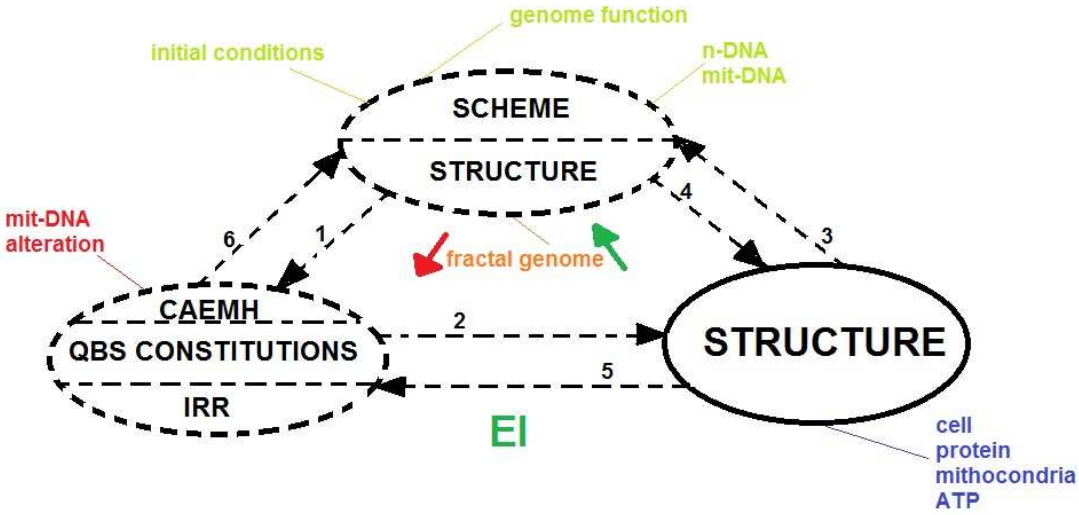
The principle of the process is the Energy-Information (EI), which is catalytically in nature. The level of Vibration-Energy (EV), related to Energy-Information (EI), is measured on the level of tissue oxygenation from the perspective of QBS: namely the 'Latency time' of reflex. Indeed, stimulating the trigger-points of a biological system, such as the liver, "simultaneously" a sympathetic hyper-tonicity after a latency time dependent on the intensity of the stimulus is built up: this is related to the intensity of liberation of adrenaline and nor-adrenaline in the biological system, so that we can observe the nonspecific gastric reflex: the stomach swells "simultaneously" when the critical level of low energy or low oxygenation is reached.

Under these conditions, in fact the biological system has become thermodynamically isolated. We are in this case, in the non-local reality: there is simultaneity and synchronicity. On a completely health human being (without RR) EI is in fact high enough, and then there is simultaneity of information. Local and non-local reality co-exist, they exist simultaneously but in parallel, they do not overlap. When EI decreases, EM –Energy Matter – as a consequence increases, and when EI falls below a certain threshold, non-local reality "disappears" and we can observe just local reality. In summary, if there is enough high EI, there is not RR, while if there is low EI, non-transitory and not occasional (lower EI in transient form, for instance, occurs with the Apnea test in health individuals without RR) since permanent, then there is RR (associated, i.e., with Oncological Terrain).

In biological systems the 'Energy Information' can be transmitted chemically - through metabolic processes - and/or electrically - through the neurotransmitters - peptides. The peptides can be imagined as "antennas", which carry information (waves) non-locally, simultaneously and synchronously by resonance (in case of non-local reality with high EI), or locally in space-time. In biological systems the EI is transmitted through the classic routes in the local reality, using substrates that reach the target tissue via blood, lymphatic, venous systems (hormones, cytokines, etc.) or through the nerve pathways (neurotransmitters) characterized by polarization - depolarization: there is time and energy consumption (if I move a substance from A to B, this implies waste of energy, and spending time). On the contrary, in non-local reality pure and catalytic EI acts according to what is known in the microscopic world, expression of entanglement, observable with the QBS, of both worlds. DNA, like an antenna, simultaneously to "intense" stimulation on certain trigger - points, starts to "vibrate" catalyzing the reactions without energy expenditure, between the compound A and B, with production of C. For example: abdominal lateral pinch of fat "simultaneously" active function of liver PPAR (the mill that burns fat and glucose) revealed by the "simultaneous" local microcirculatory activation[iii]. There is a continuous structural coupling bodies-environment in all directions. If there is a tendency to disease (RR), the complex dynamics in biological system decreases: there is no or lesser chaos according to the fractal dimension (fD), detectable through the reflex-diagnostic-percussio-auscultatory (Stagnaro, 2004a), with the simple use of the stethoscope, measuring the latency, intensity and duration of reflexes. The absence of the strange attractor or of deterministic chaos, is signal of low EI, the entropy is tending to zero, then in this case there is a local reality of information transmission, there is not the non-local reality. We must therefore enter EI (or create the conditions to increase it) in order to restore a sufficiently high level of EI. In accordance to Angiobiopathy (Stagnaro, 2009a), improving mitochondrial activity in the parenchyma and in microvessel cells favorably intracellular free energy is involved and various biological activities are improved: the microcirculation will be normalized. QBS allows accurate and direct study of being and functioning of microvessels and only indirectly of the related parenchyma[iv]. If the way of being and functioning of the microcirculation improves it means that it is also improved the way of being and functioning of its parenchyma. This is done by stimulating the activity of mitochondria by acting on the vehicles that transmit EI: metabolism (chemical process), peptides' net (electric-electronic process), but also improving, normalizing tissue oxygenation, expression of the normal operation of mitochondrial oxidative phosphorylation. Indeed, the mitochondrial functional cytopathy is the *sine qua non* of more frequent and severe human disease and not. Exogenous prevention and therapy (with environmental action) is done directly on EI (and related EV) at chemical and at electric level: such as acupuncture, which also acts on neurotransmitters or peptides.

THE PRINCIPLE OF RECURSIVE GENOME FUNCTION: QBS CLINICAL AND EXPERIMENTAL EVIDENCES

In the Principle of Recursive Genome Function (Pellionisz, 2007) the recursive feedback DNA – RNA – Protein from both sides is considered. By this way, not only Genome Function affects RNA and proteins, but also the Proteins can affect Genome Function, because there is an Information feedback: the output information from gene to protein, turns an input information from the opposite side at the next step.



Scheme 15

This is a very important point, because from the fact that proteins can affect Genome Function, we can argue that it is possible to modify or reverse in some way DNA genetic alteration, if there is, directly acting on the structures (cells, proteins, mitochondria, ATP). In truth, there are already clinical evidences that this hypothesis is valid, as proved by Manuel's Story.

The Manuel's Story

This is the story of Manuel, first newborn with negative Oncological Terrain, from parents both with positive OT. Manuel, born on last February 28th, 2010, is the first baby into the world without 'Oncological Terrain', although both his parents are OT positive.

The 'Oncological Terrain' - OT, as seen in the introduction, is the "Terrain" where one day it could "suddenly" appear the cancer in a subject. It must be stressed that not all people have this "ground" and that by means of a refined bed-side diagnosis it can be determined from the moment of birth if a person has or has not the OT. Even in the subject without OT "asocial" malignant cells may arise, but these are destroyed by effective antibodies defense or are done return to normal state. In other words, these tumor cells do not exceed the early stages of replication. Quantum Biophysical Semeiotics - QBS - teaches that those who are negative for the 'Oncological Terrain' will never get cancer, except - perhaps - very few situations of particular weakening of defense mechanisms (dialysis, anaemia, emaciation, severe cardiovascular problems, etc.), while the subjects with positive 'Oncological Terrain' *might be at risk of cancer*. It is interesting to note that QBS allows the physician to recognize the 'Inherited Real Risk', located in a specific area of a biological system.

On the basis of this diagnosis we can therefore lead to a real and effective primary prevention of course only on those who are selected in a rational way with the original QBS diagnosis. Positive 'Oncological Terrain' is an indicator of a genetic modification of maternal mitochondrial DNA. This means that in subjects with positive 'Oncological Terrain', there is a well-defined upstream mitochondrial cytopathy, or respiratory distress status of the cell, which has been called CAEMH (Congenital Acidosic Enzyme-Metabolic Histangiopathy), resulting in turn from a genetic alteration of mitochondrial DNA almost always from the mother's side. In this context we have to understand, as seen in the introductive chapter, the significance of three simple expressions: 'white zone', 'gray zone' and 'black zone'. Generally, in contemporary medicine it is thought that only two zones exist: the white (good health) and the black one (the disease), but we have to take into account the existence of the 'gray zone', the slow "event-ing" of the disease, which can take years or decades, as it is the case of type 2 diabetes mellitus.

In essence, any disease as regarded by the QBS is preceded by a slow process, often silent, but not detectable by usual diagnostic measures and laboratory tests, before manifesting itself. We are able to see, i.e., cancer, in his pre-embryonic and pre-metabolic stage, although it “suddenly” appears. In fact, from the moment of birth it is possible to diagnose the presence or absence of 'Oncological Terrain', and moreover to detect in any positive OT subject, at any age, if his/her 'Oncological Terrain' is accompanied by the 'Congenital Real Risk ' of cancer and then localize it, identifying exactly what kind of tumor could arise. The 'Oncological Terrain' is indeed a generic "ground", so that after diagnosing it, we do not yet know if and when it will appear its 'Real Risk' and what type of potential tumor is. To know these additional information we have to do a more refined QBS diagnosis. It is a multi-stage process: at birth we could have the 'Oncological Terrain', which may be accompanied soon or later by a particular 'Inherited Real Risk' of cancer. We are still in the pre-clinical stages of the disease. The disease is always potential in these stages, but clearly from a simple 'Oncological Terrain', just joined by the 'Real Risk' of lung cancer, for example, in this passage, in this period of time, the "Risk" of cancer is increased. We can say that a person with OT plus 'Congenital Real Risk' of cancer can get a tumor, thus eliminating the conditional verb, and it is also explained the “suddenly” just quoted above. The word "suddenly" makes sense only for those who are unfamiliar with the OT and the 'Real Risk' of cancer. The 'Manuel’s Story' is the realization of a prophecy made in 2004 at the end of a Stagnaro’s (2004c) monograph on ‘QBS constitutions’, where the hypothesis that a negative OT child could born from parents both OT positive is introduced, if they had undergone a preventive therapy’s treatment prior to baby’s conception.

In truth, this is a paradigm of pre-preventive therapy. Quantum Biophysical Semeiotics, in addition to the most severe disease diagnosis as, for example, many solid and liquid forms of cancer, type 2 diabetes mellitus, heart diseases, hypertension, osteoporosis, is concerned to suggest preventive therapies so that, especially in those at risk for some diseases, the still potential pathology should not manifest itself in practice. In another Stagnaro’s (2004b) monograph it has been pointed out, for example, the importance of assuming conjugated-melatonin according to the recipe of ‘Di Bella-Ferrari’, in conjunction with other appropriate preventive therapies, understood in their etymological sense: i.e., to avoid tobacco smoking, sedentary lifestyle and overweight, and at the same time to favor an healthy lifestyle, using for instance a custom Mediterranean diet, encouraging a daily physical activity and bodily movement, and energizing both the body and the mind, for example, through morning gym exercise, daily walking, yoga, meditation and prayer.

It needs to be understood that the CAEMH reveals the state of suffering of the cell, particularly with respect to mitochondrial DNA, and thus of the mitochondria, responsible for cell oxygenation. In case of alteration of mitochondrial DNA, it is clear that the mitochondrial oxygen becomes deficient. Taking melatonin, whose synthesis begins in the mitochondria, we are going to improve the mitochondrial respiration and functioning of the respiratory chain, i.e., the red-ox processes, reducing consequently the 'Congenital Real Risk' of cancer, if there was. The preventive therapy could not eliminate definitely the "Risk" of cancer. We must always keep in mind that if there is a genetic alteration of the mit-DNA due to the mother, this could be forever[v]. What we can do instead is to make "residual" the 'Real Risk' of cancer.

Improving the mitochondrial respiration, or tissue oxygenation, we render *harmless* the risk of cancer. To give effect to this outcome over time, a continuous preventive therapy is however needed. Manuel is the son of two parents both positive for 'Oncological Terrain', who agreed, following Stagnaro’s advice, to undergo a preventive therapy consisting of diet etymologically speaking and of assuming conjugated - melatonin 'Di Bella - Ferrari', before baby’s conception. After a few months of treatment, Stagnaro personally visited them, discovering that they had an 'Oncological Terrain' with 'Real Risk' of cancer but in its "residual" variant. The conception occurred only after that visit, and Manuel was born with negative 'Oncological Terrain'. On Sunday, April 10th, 2010, Stagnaro personally visited Manuel, and he could see and state the first new-born without 'Oncological Terrain', though conceived by parents both positive for OT. This means that Manuel will never become ill with cancer, even in presence of several risk factors, and he will never surface in a 'real risk' of cancer which, as before explained, may exist only in the presence of a pre-existing QBS Constitution or “Terrain”.

1st STEP – Diagnosis of positive Oncological Terrain

	Rinaldi's Sign (Scheme 5)	***fractal Dimension***	***Traffic light (Figure 13)***	***EI – Energy Information***	***Diagnosis***
Father	*POSITIVE*	*2 < fD < 3*	*yellow*	↘	*CAEMH, OT and Real Risk of Cancer*
Mather	*POSITIVE*	*2 < fD < 3*	*yellow*	↘	*CAEMH, OT and Real Risk of Cancer*
Manuel	*Not yet conceived*	*Not yet conceived*	*Not yet conceived*	*Not yet conceived*	*Not yet conceived*

Table 3

2nd STEP – Manuel is born without Oncological Terrain

	Rinaldi's Sign (Scheme 5)	***fractal Dimension***	***Traffic light (Figure 13)***	***EI – Energy Information***	***Diagnosis***	
Father	*Positive*	*3 < fD < 4*	*Green*	↗	*CAEMH, OT and residual Real Risk of Cancer*	*Manuel's conception*
Mother	*Positive*	*3 < fD < 4*	*Green*	↗	*CAEMH, OT and residual Real Risk of Cancer*	*Manuel's conception*
Manuel	*Negative*	*3 < fD < 4*	*Green*	*Optimal*	*Absence of OT - health*	

Table 4

In Table 3 the first step of Manuel's story is evidenced: the diagnosis of Oncological Terrain and Inherited Real Risk of cancer, denoted by a fractal dimension lower than 3, and from 'yellow' traffic light, signal of danger. In these cases there is in fact an insufficient tissue oxygenation and mitochondrial respiration (lower EV and EI) due to CAEMH and genetic alteration of mit-DNA. If Manuel would have been conceived at this time, he should have been born likewise with positive Oncological Terrain.

After first visit, his 'future' parents –as above said - decided to start a preventive therapy with conjugated-melatonin. Three months later they made a second visit and the situation, as described in Table 4, was changed. The fractal dimension increased reaching a value greater than 3, and lighted the green light: there was still the positive Oncological Terrain, of course, seen that is something genetic, but the real risk of cancer turned residual. This means that both tissue oxygenation and mitochondrial respiration, due to a greater EV and EI, had improved. Manuel's conception came only after that second visit, and he was born with negative Oncological Terrain (absent), clearly denoted by green traffic light, a fractal dimension between 3 and 4, and a physiological tissue oxygenation and mitochondrial respiration.

Considering the PRGF (Scheme 15), Manuel's Story is the first example of Over-Lapping Generation Reversed Recursive Genome Function (OLG-RRGF), in accordance with the Principle of Recursive Genome Function (PRGF). The preventive therapy applied on a couple with altered mit-DNA influences the future generations (new-born without altered mit-DNA): the treatment in some way affected their Genome Function, without 'reversing' it completely, but 'reversing' the alteration of mit-DNA in the new born. The therapy applied on structures (mitochondria) directly acts on the feedback recursive communication with Genome Function, in some way affecting its 'learning parameters'.

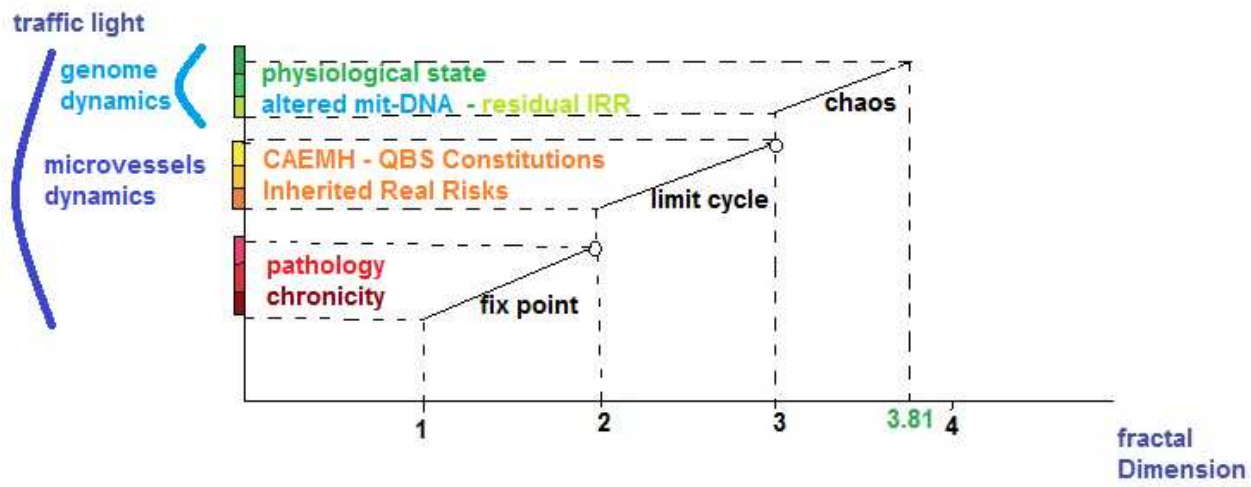
The Genome Function (5):

(5) Z(n+1) = F(C,Z(n))

can be rewritten thinking of the set of parameters C, not as fix and invariant data. In (5) the parametric set C is thought as fix and invariant, as to say: DNA is that for ever, there is not any recursive or learning dynamics. If there were any genetic alteration of mit-DNA, this should be for ever and ever. On the other side, we can think of a set of 'learning parameters', so that they can be in truth 'learning pseudo-variables' (6):

(6) Z(n+1) = F(C(n), Z(n))

By this way, C(n) is a set of 'Life Long Learning Parameters'- LLLP – which are learning step by step due to the incessant feedback, i.e., between genes and cells, proteins and DNA, and vice versa. C(n) can give the appearance of an invariant and fixed set (in case of physiological states, or in case of 'gray zone' – genetic alteration of mit-DNA - without preventive treatments), while it is learning and changing, i.e., in consequence of proper preventive therapy. In the case of Manuel's parents, C(n) has changed, but not enough to reverse their Genome Function, i.e., to make disappear their CAEMH and Oncological Terrain, so that the unique effect has been to transform their Inherited Real Risk of Cancer in its residual variant. Genome is in fact a set of processes which are continuously learning and updating their relations and connections. Due to these feedbacks their fractal structures can be improved (or worsened) and we can observe it according to their fractal dimension. In this case C(n) joined anyway a certain threshold of EI, so that their fractal Dimension and MFR reached a physiological level. A physiological C(n), even if not optimal, allowed Manuel's parents to procreate a child without Oncological Terrain.
On the basis of this experimental evidence, we can argue that an Over-Lapping-Generation Revertible Recursive Genome Function (OLG-RRGF) is already possible, but we could furthermore investigate if a Life-Long-Learning Revertible Recursive Genome Function (LLL-RRGF) is even possible. Is it theoretically possible that a proper preventive treatment could make disappear the alteration of mit-DNA still in life and not just for future generations?
If Genome Function can be though according to (6), 'Life Long Learning Parameters' could, in theory, reach an optimal set of C(n) still in life, so that, i.e., mit-DNA alteration can be completely reversed. Recent experiments with quantum devices analyzed with QBS tools, confirm this hypothesis.
They seem to foster the complete disappearing of Oncological Terrain and CAEMH along time.
A device capable of capturing the electromagnetic frequencies of a suffering parenchyma, can customize a quantum treatment capable of sifting, i.e., the Oncological Terrain and CAEMH, allowing the Life-Long-Learning *Revertible* Recursive Genome Function to become an effective Life-Long-Learning **Reversed** Recursive Genome Function (LLL-RRGF).



If we are in the gray zone, we can think of 3 main cases:

	Genome fD Traffic light	***Microvessels fD-Traffic light***	***Traffic light***
*1) **CAEMH+OT+IRR** (**Genome structure** fractal Dimension depends on **Genome function**- scheme with C(n), set of parameters, which are under a certain EI threshold: light green traffic light for Genome, yellow light for microvessels);*	 *3<fD<3.81*	*2<fD<3*	
*2) **CAEMH+OT+residual IRR** (**Genome structure** fractal Dimension depends on **Genome function**- scheme with C(n), set of parameters, which are under a certain EI threshold, but some learning dynamics have taken place because the ongoing preventive therapy, which anyway did not allow to reach the physiological level fD=3.81; we can think of fD as a step function (figure 13): in this case there is still mit-DNA genetic alteration, therefore CAEMH and OT: it has not yet taken the dark green, both genome and microvessels has got a 'light green' fD traffic light);*	 *3<fD<3.81*	 *3<fD<3.81*	
*3) **absence of OT and CAEMH - mit-DNA genetic alteration disappeared** (**Genome structure** fractal Dimension depends on **Genome function**- scheme with C(n), set of parameters, which denote that we are over a certain EI threshold, due to learning dynamics which have finally taken the dark green. This is a physiological state and both fD of Genome and microvessels is equal or more then 3.81).*	 *fD≥3.81*	 *fD≥3.81*	

Table 5

At this point, from the 3 cases above mentioned in Table 5 it is evident that there is a 'fractal hierarchy', or else there are hierarchies which we can deduce from fractal dimensions both of genome and microvessels. There is more robustness, stability and solidity in genomic dynamics (conservative and dissipative systems at the same time, because there are genome fractal structures with chaotic dynamics coming from genome function) than in downstream dynamics (cells, proteins, ATP, mitochondria) with more flexibility and sensitive dependence on initial conditions (SDIC). The 'fractal hierarchy' explains why green and yellow traffic lights can be simultaneous like in case 1, while there is the logic contemporaneous presence of light green and of dark green both in genome fD and microvessels fD, respectively in case 2 and in case 3. The 'hierarchy' is evident and emblematic in case 1: we can observe system dynamics with different grade of importance, adaptive behavior, flexibility, learning, sensitive dependence on initial conditions. A higher hierarchical level (genome function) there is when a higher robustness and solidity and a lesser dependence on initial condition and on environmental conditions are requested.

1) it is at the same time an emblematic and educational study case. The traffic light is 'light green' upstream of the genome structure, which clearly reflects the genome function's dynamics. 'Light green' denotes a lower than normal fractal dimension, because there is a genetic alteration of mit-DNA, which gives rise downstream to yellow traffic light at micro-vessel level: the Inherited Real Risk of disease (also able to be transmitted to future generations). In case 2), under therapy, downstream microvessels are working better, i.e., IRR becomes residual, so that it has already triggered the 'light green' traffic light. There is a step function of the genome structure (and micro-vessels) fractal dimension, 3 colours with different shades: only after passing a certain threshold of EI it is possible to move to a different shade of colour or to a different colour (Scheme 16).

We have to highlight that preventive therapies suggested by QBS are of different kind. Some of these therapies (conjugated-melatonin, NIR-LED, LLLT, etc.) improve tissue oxygenation and mitochondrial respiration, and then they increase the level of EI, mostly from an *energetic* and quantitative point of view. These therapies are in fact generalized, non-personalized, so that they do not allow to trigger upstream a 'dark green' light (typical of physiological status, without any DNA alteration). In this way the genome function-structure continue to be denoted by a 'light green' light, there is still CAEMH and genetic alteration of mit-DNA.

Case 3) can be viewed both as the physiological and ideal one, i.e., concerning a subject without any genetic alteration of mit-DNA from the moment of birth, or as the result of a very recent QBS experimentation by means of a well defined Quantum Medicine device. This innovative therapy, whose QBS preventive effects has been actually discovered by Stagnaro for the first time, allows to capture the exact frequencies of the (effective, potential or silent) suffering parenchyma, in order to introduce electromagnetic stimulus in the body with the same so customized frequencies. This procedure improve in some way the PNEI system and the level of EI, both from quantitative (energy) and qualitative (information) point of view, and allows to trigger the 'dark green' light both upstream (in the genome structure-function) and downstream (in the micro-vessels of the investigated parenchyma). In this way, it seems that we are able to enter into phase coherence, and in line with the frequencies of the altered mit-DNA, starting some feedback recursive communication. This explains why EI, in this way, exceeds a certain threshold. EI is better understood in qualitative-informative terms than in quantitative terms - therefore it is very important to know and capture the right information, the exact frequencies of each parenchyma - like in the Quantum Potential discovered by David Bohm.

Then, as the access code or the password is found, it is natural that the Energy Information EI should directly enter recursively on mit-DNA, in a reversible way, namely by turning off the genetic alteration: this is consequently repaired thanks to the qualitative information which finally came through the login password.

We highlight now a fundamental point: the correspondence, or not, between fractals and chaotic dynamics. There is not a two-way correspondence between fractals and chaos: an object can be fractal, but not consistent with chaotic dynamics, or an object can have a chaotic equilibrium but not to be fractal.

In case 1) there is a 'light green' upstream (fractal dimension more than 3 but less than 3.81, chaotic dynamics) and a 'yellow' downstream (fractal dimension lower than 2, limit cycle). Genome structure fractal dimension is lower than a certain threshold (3.81), therefore there is genetic alteration of mit-DNA, CAEMH and OT.

In chaos theory literature the logistic map is well studied: the same function can give rise to different dynamics and equilibrium (fix point, limit cycle, period doubling, chaotic attractors, windows of stability, etc.). Different sets of initial conditions (parameters) give rise to different type of equilibrium. The parameters are what make that there is an attractor rather than another one.

Genome structure, being fractal, comes from a genome function which can bring about different chaotic dynamics with fractal characteristics, but at the same time this complexity can be reduced, therefore with a different fractal dimension.

In case of micro-vessel dynamics we can observe different type of equilibrium: strange attractor (physiological states), limit cycle equilibrium (tendency to pathology), fix point equilibrium (tendency to chronicity). As the equilibrium is not chaotic anymore, this means disease or potential pathology (real risk of disease). In turn, genome dynamics are in a higher hierarchical scale: it is not allowed to think of genome structure-function with non-chaotic dynamics. If this complexity was missing, this would mean the end and the death of the subject, given that the genome is responsible for the entire life of the human body (in all its connections between biological systems, organs, tissues, cells, etc.).

That's because the set of parameters C(n) can be thought of as a learning one, but certainly with much more strength and slowly compared to what can be learned downstream, for example by a cell or a protein. This is just because of protection of life itself: therefore it is necessary a 'login password' to change and improve in some way the set C(n) of the genome function, i.e., by capturing and recording the local frequencies of the human body, as in the actual QBS experimentation still in progress.

The case 1) has a yellow light downstream and a 'light green' upstream for obvious reasons of preservation of life itself: there is an algorithmic complexity and chaotic dynamics slightly less than a physiological situation (the genetic alteration of mit-DNA is then that of a mild mutation which does not affect the overall complex behavior of the whole body and each of its parts, processes and relations, because otherwise there would be no life at all).

We are then confronted with fractal hierarchies of different weight and importance as shown in (7).

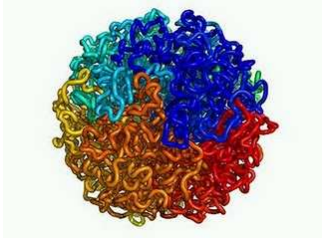


Figure 6

Genome fractal structure in 3D (Figure 6) refers to the arrangement of genes in space. It has a fractal dimension between 2 and 3 (as a sponge full of holes), but this is not the filling fractal dimension of the physical space of the genes that we are interested in. We are much more interested in genes' dynamics: connections, communications, activation of certain genes compared to others, transferring information, and so on.
Similarly QBS does not measure the fractal dimension of filled space on the tissue or microvessels as physical structures, but the dynamics within them, such as those fluctuations in the microcirculation. This fractal dimension of gene's dynamics (upstream) cannot have a range lower than what is happening downstream (proteins, cells, tissues).
These premises introduce the following principle:

"Principle of fractal hierarchy"

(7) *Genome dynamics fD ≥ Microvessels dynamics fD*

The fractal dimension of genome's dynamics must always be greater than or equal to microvessels' dynamics.

If genome dynamics fD is more than 3 but less than 3.81, i.e. fD = 3.2, this is a case of mit-DNA genetic alteration (light green) and micro vessel dynamics fD can be:

a) *2 < fD < 3 in case of CAEMH, Oncological Terrain and Inherited Real Risk of cancer (yellow light);*
b) *3 < fD ≤ 3.2 in case of CAEMH, Oncological Terrain and residual Inherited Real Risk of CAD (light green), if a proper preventive treatment has taking place;*

Microvessel dynamics fractal Dimension value, both in case a) and b), is never higher than genome dynamics fD value. If microvessels fD reaches a value more than 3.2, this would mean that a recursive mechanism has been taking place (principle of recursive genome function), so that genome dynamics fD is synchronically and no locally augmented. The ongoing experimentation is then confirming the chance of the following case:

c) *Genome dynamics fD → 3.81 (physiological state)*
Microvessel dynamics fD →3.81 (physiological state)

Actually, we can just observe the change of microvessel dynamics fD, but from the "principle of fractal hierarchy" we can deduce the correspondent change of genome dynamics fD as in case c).
From the experimentation still in progress we can anticipate the following remarks, in chronological order:

0. A preventive treatment is applied in patients with CAEMH, QBS Constitution, and Inherited Real Risk of disease (cancer, T2DM, CAD, etc.);
1. During a well defined period of time T, due to DNA reprogramming, microvessel dynamics fD exceeds 3.81;
2. This unusual fD value coincides with an extra-mitochondrial activity;
3. At the end of the period of time T, the mitochondrial activity is normalized and microvessel dynamics fD is stable on 3.81 (physiological level);
4. After treatment application, during all the period of time T and at the end of time T, CAEMH, QBS Constitutions and IRR completely disappear;
5. According to the 'principle of fractal hierarchy', after the treatment mentioned in point 1 we observe the following cases:

d) *Genome dynamics fD ≥ 3.81 (DNA reprogramming during T)*
Microvessel dynamics fD ≥ 3.81 (DNA reprogramming during T)
e) *Genome dynamics fD ≥ 3.81 (physiological DNA after T)*
Microvessel dynamics fD = 3.81 (physiological DNA after T)

The above mentioned remarks confirm the fact that it has been established a recursive mechanism and this is consistent with the Principle of Recursive Genome Function. Genome dynamics fD is not directly observed but deduced from the principle of fractal hierarchy, while microvessel dynamics fD is exactly calculated through QBS tools.

Conclusions

In this paper we have shown that Quantum Biophysical Semeiotics clinical and experimental evidences are consistent with and fully confirm the Principle of Recursive Genome Function. We can argue that the genetic alteration of the mit-DNA is reversible, generally not for a lack or impairment of genes, but for qualitative information imperfections in genes networking which lead to the activation of inappropriate genes or to inefficient configurations, defective or missing in some cases. Similarly, in microvessels there are communication obstructions which slow down the communication itself (blood flow) from structural and functional point of view. In parallel, it may be assumed that the alteration of the mit-DNA is reversible, during lifetime, and not just in overlapping generations, not for the fact that we create new genes from scratch, or because we are able to repair single genes in some way in a patient (as in genetic determinism), but because we intervene holistically on the whole, thanks to a 'login password' which enters into the whole system, so that a proper and customized release of 'information' gives resonance to a virtuous feedback mechanism between DNA, RNA and downstream structures (tissues, cells, proteins, mithocondria,..) and vice versa, restoring physiological DNA dynamics.
This is the reason why, as a consequence, genome fD rises to physiological levels, mathematically demonstrating the neutralization of genetic imperfections.

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[i] Metabolic syndrome is a combination of medical disorders that increase the risk of developing cardiovascular disease and diabetes. It is also known as metabolic syndrome X, syndrome X, insulin resistance syndrome, Reaven's syndrome. The pre-metabolic syndrome, as defined by Stagnaro, is the syndrome that precedes the metabolic one, and is linked with congenital real risks and their associated biophysical semiotics constitutions.

[ii] Melatonin is a natural substance that our body produces itself. It is produced by synthesis in the laboratory and placed in the body is to act on mitochondria, especially increases mitochondrial phosphorylation, it produces more EV and therefore greater EI and this must be for the benefit of the entire body, improves breathing (especially at night; we produce melatonin mainly from the early hours of the night until around dawn), and therefore this is a hormone that is universal and is good for the treatment of multiple diseases, or tendencies to pathology, and then to make the RR residual. It is also a good neurotransmitter.

[iii] Lory's experiment is based on the fact that "all" subatomic components and then atomic and molecular structured to form a cell and the whole cell or parenchyma, are correlated between themselves and with "all" the other branch of the same embryological in a four-dimensional space, like they are just "plot" (entanglement) two electrons observed by Aspect in his famous experiment. The effect of' entanglement means that the information takes on a “non-local” dimension. Lory’s experiment is as follows: if it is done a digital pressure applied over a parotid gland, or a salivary gland sublingual, of a "single ovular" twin sister, simultaneously it is observed microcirculatory activation type I associated in the pancreas of the other twin sister, regardless of the distance that separates them: meters or kilometers (see in the references Manzelli and Stagnaro).

[iv] The micro-circulatory remodeling is directed by the way of living and working on the parenchyma: if the subject is healthy, is healthy the related parenchyma on the microcirculation (see angiobiopathy theory, dealing with diseases of blood and lymph vessels in accordance with the semiotics biophysics). Certainly a loss, rheumatism, immune, infectious, can act both directly and indirectly. See [http://www.semeioticabiofisica.it/microangiologia/common.htm]. It may be that in the long run re-organization becomes difficult or impossible because the flow decreases more, and then are built up of feedback mechanisms for which are to activate dormant cancer cells. Aging with free radicals that accumulate contributes to further damage both micro vascular and parenchymal: even endothelium (cell layers lining the inner surface of blood vessels and heart chambers) and smooth muscle cells possess mitochondria. Remodeling micro circulatory type cancer is an expression of mutations of genes within cells in that forum: any change in gene expression - cell finds its expression in the parallel alteration of its microcirculation (microvascular tissue units): the tissue here is around the vessels, interstitial, not the parenchyma! If these processes are blocked, stops the entire organization. Very important is that if there are congenital abnormalities, genetically transmitted through the mother (see CAEMH, mitochondrial cytopathy or mitochondrial functional pathology in the site www.semeioticabiofisica.it) amending the unfolding vital physiological processes occur the most serious human diseases, and not, now real epidemics. Autopoietic networks must therefore regenerate themselves continuously in normal and physiological way, to maintain its organization.

[v] A very recent QBS experimentation, as introduced in the following chapter, is showing that there is the chance to reverse even the mit-DNA genetic alteration, using an innovative quantum therapy, centered on Energy Information