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CANCER, ENVIRONMENT AND DISRUPTION OF DNA STEREOCHEMISTRY

Branko Babić[164]

Abstract

Well into history, Cancer was known about and recorded by the healers of the day as a fatal disease for which there was no cure. Millennia later, the rare disease remained a fearful diagnosis for which there was no curative treatment and cancerous tumours were cut out and treatments relied on poorly understood herbal concoctions which provided some relief but made little difference to the fatal outcome. In our time, cancer incidence is well beyond epidemic proportions but its treatment remains limited to Surgery, Radiotherapy or Chemotherapy. Only recently, are the mechanics of the disease being unravelled to demonstrate an environmental cause of cancer, related to stressed biochemical processes corrupting the assembly of recorded information contained in the DNA. Cellular processes not able to adapt to the environmental pollutant insults damage DNA. 50 years ago research related to resonance of chemical bonding led to the concept of fundamental vibrational enhancement of the DNA structure in an attempt to disrupt the stereochemical relationships that hold the DNA construct in its shape and form. Research into identifying the difference in the fundamental resonance frequency of cancerous DNA as compared to the fundamental resonance frequency of normal DNA failed but recently, it has become possible to accurately disrupt the base sequence of genomes to destroy damaged cells. Cancer cells are deregulated cells and do not repair well once disrupted thus the Nikola Tesla fundamental resonant energy knowhow is presented, using the 3,6,9 Ratio to disrupt biochemical processes and organelle structures in cancerous cells. Treatment of cancers remains focused on the premise that cancer is a genetic disease, but this paper argues the case for this disease to be based on the inability of the mitochondrial biochemical processes to adapt to the cytol buildup of contaminants and environmental insults, leading to changes in mitochondrial DNA and nuclear DNA, that cause the deregulation of cell homeostasis. The Paper restricts its discussion to published research and is challenging the Official Controls of the type of treatments that can be used to treat these diseases. It takes up cudgels to argue the case for the removal of controls exerted by big business, greed driven money making and politically controlled policy makers. Effort is expended in demanding the reintroduction of tried and tested methodology that benefit the ill.

Key words: *Cancer, cell biochemistry, resonance, DNA, mitochondria, ATP, energy.*

Introduction

As a student of Chemistry at London University the author became mesmerised by molecular bonding. It was difficult to understand the dynamics of Atomic Orbital Theory and a great deal of time was spent trying to make the various concepts relating to orbital theory work.

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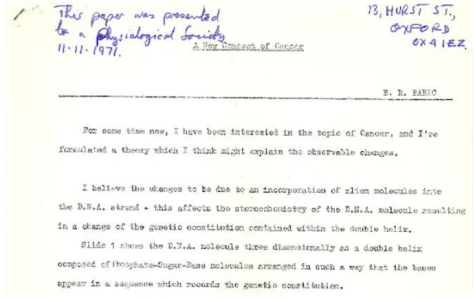
Gradually, the mechanics of atomic and molecular bonding became a fascination and given that a chemical bond is not a physical linking of one atom with another but rather, an electrostatic force holding opposite charges together, the realisation took hold that there was something wrong with the atomic construct as thought at university. And so bonding became ever more consuming accepting the idea that opposite charges were attracted towards each other and repelled as the two entities came closer together, to result in a vibration which shortened and lengthened the electrostatic bond between the two entities. There is a "resonance" to atomic and molecular constructs that have characteristic resonating frequencies. The process of adding energy to a resonating structure is a very delicate balance, as adding too much energy leads to the destruction of the entire molecular structure, rather than a controlled modification needed. It became obvious that reinforcing the chemical bond's natural resonating frequency that chemical bonds could be broken up by synchronously adding energy to the worked conformer. Given any specific resonating frequency of a molecular construct, any and all mega molecular arrangement could be broken up by adding energy to the resonating whole. Systematically adding energy to any vibration that was matched to the natural or fundamental resonating vibration of the given chemical entity, results in the entire molecular structure braking up and that, has significant implications for many applications. It was understood at the time that cancer was genetically determined and the James Watson and Francies Crick 1953 model of the DNA structure played a major part in choosing DNA for a research project. The "Thesis" attempted to resolve a disease that was causing pain and loss all over the world. The complexity of the task was immense and the research project was referred to a researcher working at a London Medical Faculty, where a research project using Ultrasound vibrational knowhow was being tested for use in medical procedures. The researcher agreed that the proposed concept of synergically adding energy to the fundamental vibrational characteristics of cancerous DNA was worth trying but after several months of effort the researcher reported that he was unable to identify the difference in fundamental resonance between cancerous and normal DNA and the project was shelved. However, at one of the meetings the researcher asked the author why he had not enrolled in the Medical School to study Medicine and so, on completing the science degree, the author signed up with the Medical Faculty. In the second year of the Medical Degree the author presented a Paper (New Concept of Cancer).



This paper was presented to a Physiological Society 11.11.1971.

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A New Concept of Cancer

B. B. HANIC

For some time now, I have been interested in the topic of Cancer, and I've formulated a theory which I think might explain the observable changes.

I believe the changes to be due to an incorporation of alien molecules into the D.N.A. strand - this affects the stereochemistry of the D.N.A. molecule resulting in a change of the genetic constitution contained within the double helix.

Slide 1 shows the D.N.A. molecule three dimensionally as a double helix composed of Phosphate-Sugar-Base molecules arranged in such a way that the bases appear in a sequence which records the genetic constitution.

Figure 1: First Page of the Original Thesis presented 53 years ago

The Thesis detailing how DNA base sequences could be disrupted using fundamental resonance frequencies was presented to the Medical Faculty's Physiological Society [1] (obligatory contribution of the Secretary of the Society) which described the effort to treat cancer using fundamental resonance enhancement to disrupt the chemical bonds structuring

the Base Sequence in the DNA[165]. The attached drawings were presented at the lecture and describe how the vibrational characteristics of the base sequence bonding the DNA spiral could be disrupted and the cancer cells made to undergo apoptosis.

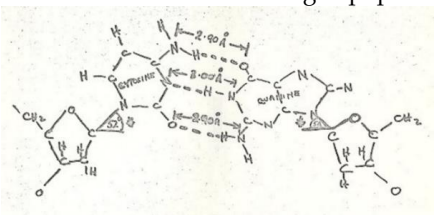


Figure 2: Hydrogen bond distances and bond angles between atoms critically important to stereochemical stability (original overhead projector slide 1971)

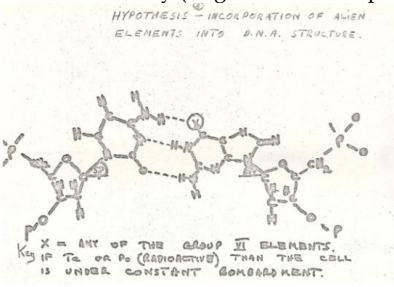


Figure 3: How stereochemical bonding in Cancerous DNA had been seen to be disrupted (original overhead projector slide 1971)

The Lecture was dismissed by senior staff at the Faculty, as it had already been shown that there was no difference in the fundamental resonance between the two types of cells and the author was patten on the head for effort and the project to selectively vibrate cancerous DNA to destruction abandoned. Some 50 years later, we see other researchers taking out Patents on the resonance concept and actually using the concept clinically and submitting the exact same concept for Clinical Trials. Mrs Charlain Bohem took out a USA Patent (US Patent 7,280,874) [2] and is selling the information used to generate frequencies that vibrate DNA. Ms Bohem is having the DNA resonance concept tested by the FDA in order to introduce fundamental resonance of DNA into Medical Protocols. In the USA the FAD (Federal Drug Administration) has to approve any given medical procedure before it can be applied clinically.

Historical survey for the evidence of the cancer story

The search for evidence of the cancer story only becomes relevant when written records are analysed and the earliest known descriptions of cancer is identified in only one papyrus from ancient Egypt. A fragment of a papyrus hyalographic, dated to about 1600BC records an example of a tumour being surgically removed registering that the disease had no treatment and was fatal. This rare example of a recorded treatment confirmed that cancer was a rare disease and records show that of the many hundreds of examinations on Mummies only one case was found with few written references describing the disease. The incidence of the disease was rare in other parts of the world too and Hippocrates (430BC-370BC) the "Father of Medicine" in Greece, recorded several kinds of cancers specifying similar characteristics seen in patients today. The treatment was based on confused therapy of the humours that had

[165]https://www.scribd.com/document/3002960/Is-the-DNA-base-sequence-stereochemical-misrepresentation-the-cause-of-cancer

little effect on the terminal nature of the disease and so it continued for many centuries making little progress into 2nd century AD where again the Greeks, led the way by further descriptive records but no understanding of the nature of the disease or improvement in the treatment methodology. Little progress was made in the understanding of the causative factors of the disease and treatment was supportive with little effect on the progress of the disease and so it continued through the 16 to the 17th century when in 1775 the first recorded case of a definitive causative link was recorded by a British Surgeon Percival Pott, who pointed the incidence of scrotal cancers in chimney sweeps and only recently, have researchers arrowed down areas of research to genomes but over the millennia, little progress was made in relating cause to effect [3, 4, 5]. During the Millennia little progress has been made in the treatment of cancer and it is only recently that the epidemic proportions of this disease have forced society to invest in sophisticated and very expensive treatments in an effort to extend the life of those effected. In spite of the investment, the woefully disappointing results remain obvious. Much of the problem is directed at the enforced, restricted limitation as to the cause of the disease. Treatments are directed at the Genome as Cancer is acknowledged by the establishment to be a genetically driven disease. The history of cancer is a fascinating journey through time, revealing how our understanding of this disease has evolved. The earliest archaeological discovery relating to cancer is linked to fossil evidence of an early human relative the Paranthropus Robustus a Homo Ergaster that lived some 1.7 million years ago whose skeletal remains showed a cancerous toe bone. The disease is ancient but rare. The search for evidence of the cancer story only becomes relevant when written records are analysed and the earliest known descriptions of cancer appear in several papyri from ancient Egypt. A fragment of a papyrus hyalographic, dated to about 1600BC records an example of a tumour being surgically removed registering that the disease had no treatment and was fatal. This rare example of a recorded treatment confirmed that cancer was a rare disease and records show that of the many hundreds of examinations on Mummies only one case was found with few written references describing the disease. The incidence of the disease was rare in other parts of the world too and Hippocrates (430BC-370BC) the "Father of Medicine" in Greece, recorded several kinds of cancers specifying similar characteristics seen in patients today. The treatment was based on confused therapy of the humours that had little effect on the terminal nature of the disease and so it continued for many centuries making little progress into 2nd century AD where again the Greeks, led the way by further descriptive records but no understanding of the nature of the disease or improvement in the treatment methodology. Over time, little progress was made in the understanding of the causative factors of the disease and treatment was supportive with little effect on the progress of the disease and so it continued through the 16 to the 17th century when in 1775 the first recorded case of a definitive causative link was recorded by a British Surgeon Percival Pott, who pointed the incidence of scrotal cancers in chimney sweeps and only recently, have researchers narrowed down areas of research to genomes but over the millennia, little progress was made in relating cause to effect [3, 4, 5].

The treatment of cancer over Millennia: Why is cancer considered a genetic disorder?

Cancer is considered a genetic disorder [6, 7] because all daughter cells have the same genetic characteristics replicated from changes to the DNA within cells. All new cells demonstrate the altered metabolic state in cancer including key alterations in glucose, glutamine, and fatty acid metabolism. There is a huge amount of research explaining the mind boggling complexity of cellular processes, including genetic disorders inherited from family genes DNA mutations

caused by ultraviolet light, radiation, clonal disruptions to the DNA sequencing have on the DNA base sequencing and other factors damaging the DNA or breaking the DNA strands [8, 9]. Other factors such as the damage caused by the papilloma virus contaminations, aging etc are just some of the processes identified that cause genetic damage that can result in cancers. Chemical stresses like tobacco and industrial pollution or lifestyle choices, cause damage that cellular homeostasis is unable to contain so that the cytosol biochemical process becomes corrupted to change fundamental cell processes. Normal cells, unable to contain the imposed stresses nor adapt to the environmental insult, change, to accommodate the stresses imposed on them and become dysregulated as a means of surviving in the hostile environment. Hanahan and Weinberg [11, 12], highlighted key features characterizing cancers that have widely been accepted. The idea that cancer is a disease caused by the accumulation of mutations, epigenetic changes, and genetic alterations in key genes [13] that regulate cell replication, cell growth, cell metabolism provides key insights into the genetic events governing cancer initiation, progression, metastasis, response to therapy, and the development of drug resistance [13]. This one disease translates to a million genotypes making it impossible to contain the disease on a clinical level? Enormous advances are being made in genetic analyses and recent genomic data from about 1 million tumour samples have identified over 2 million coding point mutations and millions of genomic corruptions and abnormal expression variants [14]. Researchers have identified whole genome sequences in tumour samples as compared to adjacent normal tissues containing 10000 to 50000 unique single nucleotides variants [13, 15]. Cancer is indeed a complex genetic disease characterized by the uncontrolled growth and spread of abnormal cells, the cause being changes in the cell DNA that lead to the disruption of normal cell function, particularly in the mechanisms that control cell growth and division. The overall result of cancerous changes is that a damaged cell grows and replicate, to pass on the damaged characteristics to daughter cells. These new cells poorly replicate the genetic information leading to further corruption of the base sequence stereochemistry [16]. All such mutations specify different characteristics to daughter cells and the vast number of base sequence expressions end up manifesting a huge number of variants in the final cancer cell characteristics. The idea that cancer is a disease caused by the accumulation of mutations, epigenetic changes, and genetic alterations in key genes that regulate cell replication, cell division, cell metabolism and cell growth shed light on the genetic events governing cancer initiation, progression, metastasis, response to therapy, and the development of drug resistance [17]. Despite the hallmarks of cancer being shared by all cancers, not a single gene mutation is linked to all cancers. The gene commonly mutated in most types of cancers is the TP53 gene [18, 19]. This demonstrates that no single gene mutation is a feature in all cancers! Cancer is considered to be a genetic disease because the clinical picture is clearly resultant of genetic mutations passed on during replication! Indeed, 90% of all cancer deaths are due to damaged DNA cells, “seeding” all parts of the body by metastatic proliferation. Metastasis, a mechanism used by endangered cells to survive impending cell death of the Mother cell and the mechanism spreads damaged cells to all parts of the body because it is thought the new cells have mutations which support the adaptation of these cells to survive in new environments [20-23].

Cancer as a Metabolic Disease

All living things need energy to perform their functions and in cells, it is the mitochondria that generate most of the energy needed to power biochemical processes sustaining life [24-28]. In the early 1900 researchers were looking for the cause of cancer but it was not until the

1920s, almost a 100 years ago, that Otto Warburg [29-30], a German Physiologist made an early breakthrough in understanding cancer's metabolic machinery. In 1924, Warburg noticed that tumours release more lactate than normal cells. Lactate being the end product of glycolysis reflected on the process whereby cancer cells convert glucose to energy without utilizing oxygen (anaerobic metabolism). This relatively inefficient metabolic process by which cancer cells generate energy, was surprisingly confirmed by the Warberg Team even in environments when there was plenty of oxygen available for the normal process of aerobic metabolism via the Crebb's Cycle in the cell's mitochondria. This became known as the Warburg Effect [31], and Warburg won the 1931 Nobel Prize in Physiology for the discovery. Following this discovery cancers were classified as metabolic diseases and it was only in the 1970s that peculiar, politico economic pressures were applied to reclassify cancers as a Genetic Disease. This so called Somatic Mutation Theory [32] limits all cancer treatment regimens to nuclear genome manifestations, with the evolving, very expensive Chemotherapy formulations. Extraordinary development, particularly so as there is no definitive genetic screening available for cancer? To this day, researchers are battling in an effort to reclassify Cancers [33, 34], as a metabolic disease with a view of changing the treatment plans in the hope of providing better medical care to the afflicted. The current dangerous treatment protocols, poison the body in the cancer cell killing process but the formulations are poorly effective and kill normal cells as well to do great harm to the patient.

Experimental assay confirming that Cancer is caused by Cytoplasmic processes

Recent research has reported remarkably elegant experiments confirming that cancerous changes relate to cytoplasmic processes and it is these cytoplasmic biochemical processes that corrupt the genome. Nuclear DNA (nDMA) is damaged by cytoplasmic processes to thereafter replicate genomic faults in all daughter cells but the initial cause of cancerous changes is clearly cytoplasmic [35, 36].

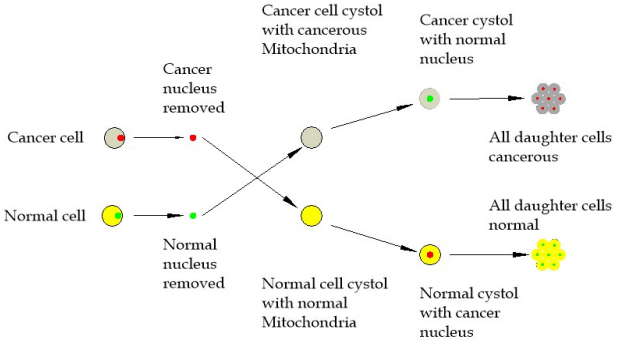


Figure 4: Nuclear Cytoplasm transfer experiments

Sayfried and Shelton, quote: argue the case for cancer being a genetic disease in their book (see also Fig 4). Probably, the most compelling evidence from cybrids comes from experiments by Jonasson and Harris conducted in human–mouse hybrids [30, 31]. Using hybrid clones generated from fusions of diploid human fibroblasts and lymphocytes with the cells of a malignant mouse melanoma, they demonstrated that human diploid cells were as effective as mouse diploid cells in suppressing the malignancy in vivo, indicating clearly that human nuclear genetic materials are not liable for cancer repression [3, 30, 31]. To validate their findings, human fibroblast cells were irradiated before fusion with melanoma cells [3, 30, 31]. The generated hybrids led to substantially higher tumor incidence, indicating that repression

of tumor formation likely depended on the function of a radiosensitive extrachromosomal element (Figure 1) [3, 30, 31]. Their findings are remarkable for several reasons, firstly, it indicated that something in normal cytoplasm was responsible for tumor suppression in malignant cells. Secondly, the suppression of tumors was not dependent on human chromosome or nuclear genetic material. Finally, the cytoplasm factor was sensitive to radiation, capable of being destroyed by irradiation leading to the loss of tumor suppression. The ability of radiation to destroy this cytoplasmic factor is consistent with earlier findings by Warburg that radiation destroys mitochondrial respiration. These studies remarkably indicate that the differentiated state of cells is maintained by normal mitochondrial function thereby repressing carcinogenesis. However, damaged/dysfunctional mitochondria enhance dedifferentiation and promote carcinogenesis. Hence, the origin of carcinogenesis depended on the mitochondria health and not on the genetic material in the cell's nucleus [3, 4]. Which begs the question: why is the genetic theory of cancer the predominant theory? These studies highlight the role of the mitochondria and cellular metabolism in carcinogenesis and the need to explore the role of dysregulated metabolism in carcinogenesis. The metabolic theory of cancer is fast gaining roots in the field of cancer studies and generating much excitement. It is evidently clear that the genetic theory generates more complexity for our understanding of cancer, while the metabolic theory of cancer is incredibly simple and holds great promise for cancer diagnosis and treatment.

In the above experiments researchers extracted healthy and cancerous cells from the same tissue and separated cancerous cells from normal cells to then extract the nuclei of cancerous and normal cells [37-40]. The "normal nuclei" were transplanted into the cancerous cytosol environment and when the cells reproduced to generate daughter cell, all the new cells were seen to be cancerous. The other group of "cancerous nuclei" were transplanted into the normal cell cytosol and went on to produce daughter cells, all of which were normal! An amazing experiment which clearly confirms that the nucleus of cells is not the causative agent in creating cancers but rather that it is the cell cytosol contents, which create conditions to corrupt the genome of cells that go on to become cancerous? Other researchers [41, 42] went on to test the concept further by using "cytoplasts" cells with removed nuclei from malignant cells and combined this malignant cytosol with normal hybrids and 97% of the transplanted cells developed tumours (see T N Seyfried and L M Shelton, Cancer as a metabolic disease). This pivotal research is being ignored by the powers that control Clinical Protocols and the expensive and virtually ineffective Chemotherapy is favoured as a tool for killing all cells these poisons come into contact with? Serious damage results from the application of Chemotherapy and 80% of Oncology Specialists suffering from cancers are reported to be refusing Chemotherapy Treatments? But treatment plans continue to offer chemotherapy as treatment of choice and the pharmaceutical conglomerates continue to profit in billions? Determined effort by the few in the last decade or so is researching processes in the Cytosol that are the causative agents in cancers changes and what appears to be obvious is that the suppressed research of Otto Warburg remains the best option for resolving the cancer problem. It appears that failure of mitochondrial functions[166], has an effect on the entire cytosol microenvironment to damages cellular processes, the genome of the Mitochondria, the nuclear DNA and RNA constructs.

[166] There is a substantial Reference list attached to this Paper: T N Seyfried and L M Shelton, Cancer as a metabolic disease. Nute Metab (Lond). 2012 Jan 27:7:7

Contaminated Capillary Bed

The author's work on the hypothesis some 50 years ago that cancers were due to the body's inability to adapt to the pollution and insults the body was subjected to and as the biological processes collapsed into an unsustainable state of homeostasis incompetence there was a general bionomic loss of function. Even 50 years ago, it was startling to read reports that there were innovative developments that pored some 10000 "new" substances into the environment each year. Given that biological system evolution take place over millions of years, it was obvious that mechanisms involved in natural adaptation to the environment were overwhelmed by insults the body could not cope with. Fifty years later, the pace of introduction of "new" substances to the environment, the quantity of insults biological systems is subjected to has increased very substantially and living things are under more pollution stress than ever. This onslaught on the bionomic homeostasis is reflected in the latest statistics showing shocking levels of cancers incidence that are reported to be 1 in 2 ie 1 in every 2 people will develop cancer of some sort, sometime in their lives! Cell populations in capillary beds are subjected to ongoing prolonged pollution resulting in increasing incidence of cancers that is alarming and well beyond epidemic proportions? To better understand how pollution damages cell biomes the discussion needs to nalyse the effects of pollution on cells in their capillary bed environment [43]. The capillary bed is the structure at the extreme end of the arterial blood supply that delivers nutrients and oxygen to cells in a continuous circulatory flow of blood, wherein, the capillary arterioles loop to become venules, flowing through the billions of capillaries serving volumes of cell populations. This arrangement serves to supply nutrients to the cells and take away end products of cell respiration. Many factors determine the functional properties of capillary beds but there is an average blood throughput through this network, reflective of the average hydrostatic blood pressure at 35mmHg at the arteriole end of the construct, to the venule end which is at 15mmHg of hydrostatic pressure. Average conditions apply for the function of this structure to result in an average hydrostatic pressure, an average rate of blood flow through the tissue, an average rate of nutrient transfer from the blood capillaries to the cells, an average rate of cell respiratory pollutants absorption into the venules, all being controlled by the homeostatic regulators. The efficiency of the capillary bed falls as the cardiovascular system, the respiration system and the many other bodily functions become fatigued with age so that the capillary bed is not well serviced in a fatigued individual and pollutants tend to accumulate.
This process of maintaining the requirements of functional cells is critical to the performance of cells and in the capillary bed there is an exchange of substances from blood plasma to the interstitial space that takes place by diffusion and pollutants resultant from cell reparation diffuse into blood capillaries to be disposed of. There is sophisticated science involved in analysing physiological conditions at this level of research [44-49]. The capillaries in these functional cell volumes show endothelial inter cell perforations that vary in size but physical flowthrough of very small solids occurs between cell aggregations and blood vessels. In disease, the system of supply and removal of capillary bed debris falters and there is an accumulation of pollutants in cell environments that stress cell functions to initiate homeostatic compensatory responses. In the original research project the author considered cancer to be a disease resultant of contaminated capillary beds [50-52] which was poisoning cells. Cell homeostasis subjected to prolonged stress adapted biomic processes in an effort to survive in the challenging environment.

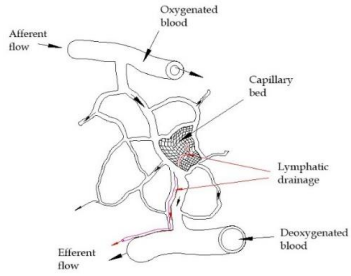


Figure 5: CAD Graphic of a Capillary Bed Construct

Cancer changes occur on a cellular level and the cell environment, its composition, arrangement and function of the cell contents is an essential environmental construct that directly relates to the development of metabolic disease.

Mitochondria

All living entities must provide fuel to drive the many processes it takes to make complex lifework and in human cells and the cells of animals and plants it is found that the processes that generate energy required to make cellular process work are located in the Mitochondria [53-57]. Mitochondria are rod shaped structures that can clearly be seen in the photograph below (circled red) taken to demonstrate various cellular organelles. The distribution of the mitochondria can be seen embedded throughout the cytoplasm (cytosol), outside the nucleus of the cell. Their place in the cytoplasm of cells is not permanently fixed and research has shown them to move about the cell and even to be exported to the outside of cell walls? The cross section of the mitochondrion shows a highly convoluted surface that is lined with enzymes and reactive components related to the function of this organelle. Research is only recently beginning to discover the extensive controls this organelle plays in maintaining cellular and bodily homeostasis.

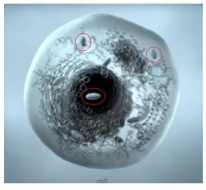


Fig 6
Latest image of a cell screening showing rod shaped Mitochondria (circled red)

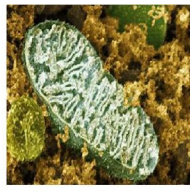


Fig 7
Electron microscope image of a cross sectiomn of Mitochondrion. Convoluted surface (Christae) increase reactive surface area

Mitochondria are strange in that they do not conform to the structure of other cell organelles and even have their own DNA. It is thought that they did not evolve within the cell but were once independent microbes that were subsumed by a more complex lifeform, in a symbiotic process during the evolutionary process. This theory, known as the endosymbiotic theory, suggests that mitochondria were once independent prokaryotic cells that were absorbed by a host cell. Over time, these prokaryotic cells became an integral part of the host cell, evolving into the mitochondria we see today. It is the unusual characteristic of having their own DNA (mtDNA)) that makes mitochondria so important in cellular functions and although the total amount of the DNA is small, it nevertheless turns out to be an important determinant in many of its functions in diseases such as cancer. Mitochondrial DNA in human cells, extends to about 16500 base pairs, contains 37 genes all of which are essential for normal mitochondrial

function. The remaining genes provide instructions for making molecules called transfer RNA (tRNA) and ribosomal RNA (rRNA), microRNA (micRNA) which is the primary transcription molecule that transfers codon information of the genome. In cellular stress environments these micro molecules become corrupted to have a major effect on the cellular biome and the extracellular homeostasis corrupting biochemical processes to lead to cellular dysregulation. Thirteen of these genes provide instructions for making enzymes involved in oxidative phosphorylation that involve biochemical pathways that generate energy for the cell. Oxidative phosphorylation occurs within the boundary of the mitochondria and form part of the Crebb's cycle that generates the largest quantity of ATP for the cell. This pathway is substantially more effective in liberation of energy from the available simple sugars like glucose but is much slower that the Glycolysis pathway occurring in the cytosol. About 28 to 34 ATP molecules are liberated by the mitochondria in the process of converting glucose to ATP. Nearly all cells have mitochondria and although most of the energy required for life is located within these organelles some energy production is seen in the cytoplasm (Glycolysis) of cells. Although other processes for generating chemical energy are found to be activated in special circumstances, sugars remain the main source of energy for cells

$$C_6H_{12}O_6\ (s) + 6\ O_2\ (g) \rightarrow 6\ CO_2\ (g) + 6\ H_2O\ (l) + \text{energy}\ \Delta G \uparrow$$

Energy released in the process of Glycolysis = to −2880 kJ per mol of $C_6H_{12}O_6$.

It is in the Mitochondria, the often referred to "powerhouses of cells" where the conversion of the food consumed, is turned into biological energy that cellular processes can use to generate the biochemical molecules like ATP (Adenosine Tri Phosphate). ATP is the main and preferred energy source in healthy cells as well as diseased cells and in conditions such cancer, ATP is the mandatory source of energy that fuels the chaotic biological processes seen in dysregulated biological conditions. Mitochondria are unique in that their genetic material controls the function of this organelle but also communicates with nuclear DNA. [58] When stressed, damaged, or failing to provide enough energy they release specific signalling molecules which can include ROS (Reactive Oxygen Species) or Calcium ions or other metabolites like small peptides to act in inter-organelle communication. Mitochondrial metabolites act on nuclear DNA to influence gene expressions that activate nuclear instructions to initiate cellular processes that adjust stress conditions to optimise homeostasis. In diseased states like cancer, signalling molecules like ROS are out of control and actually react with the nuclear DNA to cause damage to the codon stereochemistry and disrupt the information contained in codons. It is found that the mitochondrial genome is involved in a range of other functions [59] of the cell such as the homeostatic environment [60], not only of the cell itself but also contributes to the coordinated function of other cells by signalling [61] the state of the cell environment as a means of stabilising the extracellular environment. These functions include the control of the cell cycle, cell growth, immune system function, iron metabolism and heme synthesis, active transport of molecules across cellular membranes, lipid metabolism, regulators of neurotransmitter signalling, steroid synthesis, signalling molecules (ROS and H_2O_2), thermogenesis, cellular differentiation, aging, calcium homeostasis, membrane potential, genetic mutations not only in its DNA but also the DNA of the cell nucleus, apoptosis (cell death) and other functions of the cell [62]. Production of energy for fuelling functional biochemical processes of cells is the vital factor of life so that the mechanics of ATP become particularly important to cell survival. ATP is a complex molecule made up of a nucleotide (Adenosine molecule), linked to a 5 carbon sugar (Ribose) which is in turn linked to an assembly of 3 high potential energy phosphate groups. The high-energy gamma bond of the phosphate group is broken in hydrolyses reaction, to release exothermic chemical energy that fuels various cellular processes. This process of converting

ATP to ADP (Adenosine Di Phosphate) is reversible and is achieved by the enzyme phosphorylase, using a proton pump to provide the driving potential. On breaking this high energy gamma bond chemical energy is released to fuel cell processes.

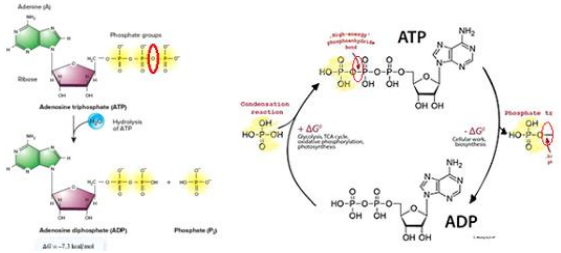


Figure 8: The fundamental energy process in the mitochondria, ATP converted to ADP to release the potential energy contained in the ϒ (gamma) phosphate bond of the chain (circled red).

How the Mitochondria produce ATP via the oxidative phosphorylation process has been clarified and involves an electron transport chain and chemiosmosis (electron shift) wherein electrons are shunted around via a series of protein complexes of the inner mitochondrial membrane creating a field potential (proton gradient) that pushes charged particles across membranes. It is the potential energy difference that drives charged sites into reactive proximity to force ADP to react with the inorganic phosphate and form the high energy bond associated with the triphosphate assembly. ATPase forms an amazing molecular motor that combines ADP with the inorganic phosphate molecule to make ATP.

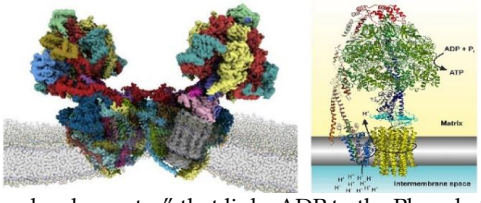


Figure 9. ATPase "molecular motor" that links ADP to the Phosphate to produce ATP

The details of the ATPase molecular motor have been worked out and although in detail, the individual steps involved in the enrichment of ADP are simple the overall work and construct of the ATPase enzyme is mind boggling [63-65]. When cells are under stress or subjected to some form of insult or trauma which interrupts the ATP cycle the mitochondria have alternate mechanisms by which to generate energy via the Glutamine Pathway and the Fatty Acid pathway, both mechanisms being undertaken by the TCA (tricarboxylic acid or the Crebb's Cycle) enzymes contained in mitochondrial walls. Without energy, the cell dies so this versatile organelle uses an important alternative mechanism the electron transport chain, which is not dependant on the availability of oxygen. This chain consists of protein complexes that transfer electrons from electron donor sites to electron acceptor sites via redox reactions. The process involves the translocation of H+ ions across the mitochondrial membrane. As electrons are transferred through these complexes, an electromagnetic field gradient is formed that pushes electrons from one site on the amino acid molecules to another, providing the potential energy to enables the synthesis of ATP. In aerobic respiration, oxygen is the final acceptor of these loose electrons.

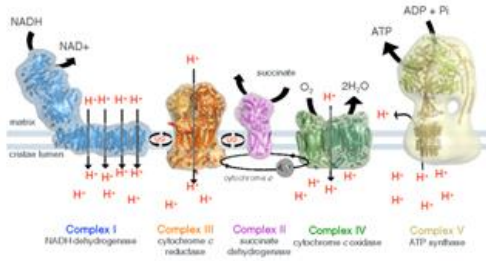


Figure 10: Mitochondrial complexes involved in active transport of substances across mitochondrial membranes.

The mechanistic details of ETC are interesting and begin with Complex I, where NADH transfers two electrons to the chain that are then passed through a series of carriers including ubiquinone and cytochrome complexes. Complex II contributes to this process by transferring electrons from FADH2. As electrons move through these complexes, protons are pumped from the mitochondrial matrix to the intermembrane space, enhancing the proton gradient. The culmination of this process occurs at Complex IV, where electrons are transferred to molecular oxygen, the final electron acceptor, resulting in the formation of water. The energy released during these electron transfers is used to generate the driving fields established by plasma charge and it is the energy of these fields that is used to catalyse ADP to the inorganic phosphate molecule to form ATP. The electron transport system not only fuels the energy processes of ATPase but it also plays a crucial role in regulating cellular metabolism that maintains cellular homeostasis. Very elegant research has demonstrated that cancer is not a genetic disease but rather that damage to the nuclear genome is the result of faulty mitochondrial function. A lot of recent research is demonstrating the importance of mitochondria in diseases like cancer. Sophisticated methodology has facilitated the extraction of mitochondria from cancer cells that were transplanted into a normal cell whose mitochondria were removed [66-69].

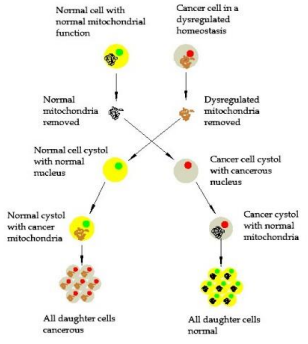


Figure 11: Mitochondrial transplants between cancer and normal cells

The result was that a healthy cell became cancerous [70-76] and that is confirmatory evidence that mitochondria are the precipitating factor in metabolic carcinogenesis. A great deal of work is being undertaken to further study the effect damaged mitochondria have on cell homeostasis. It is these elegant and complex systems involved in cellular health that can be disrupted by various factors and insults, be they biochemical poisons the body is subjected to from environment pollution, or lifestyle activities like smoking etc. These disruptions can destabilise the homeostatic balance and result in the energy production processes being challenged to cause oxidative stress. In situations where the established energy production is

damaged the mitDNA signals stress in a number of ways. This paper will concentrate on the generation of ROS (Reactive Oxygen Species) a process whereby the energy pathways generate oxygen plasma components that are very reactive and cause great damage to anything and everything they come into contact with. ROS is shown to be cancer causative and a mutagenic agent because it corrupts the stereochemical relationships between molecular constructs and energy-producing mechanisms of the mitochondria, leading to metabolic disruption of many biological processes to cause confusion, displacement, poor control of reactivity resulting in many faulty reactions that contribute to chaotic homeostasis, forcing complex cellular processes into dysregulated cellular diseases like cancer. ROS components leach out through the mitochondrial membrane to interact with the cell DNA and cause the cell to undergo mutations that result in uncontrolled metastasis.

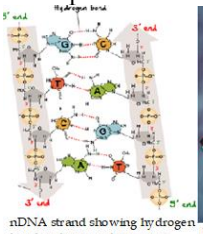
ROS Reactive Oxygen Species

Reactive Oxygen Species (ROS) are indeed pivotal in the study of cancer biology due to their dual role in cellular processes. While ROS are natural byproducts of cellular metabolism, particularly from oxidative phosphorylation within mitochondria, their impact on cellular function in disease is profound. They are involved in a variety of physiological reactions, including electron transport and enzymatic activities by NAD(P)H oxidases, which generate ROS as a byproduct of energy production. These molecules, which include species like the hydroxyl radical (OH^-), hydroxide ion (OH^-), singlet oxygen ($^1O_2^-$), superoxide anion (O^{2-}),Peroxide ion (O^{2-2}), hydrogen peroxide (H_2O_2), nitric oxide (NO^-), Peroxinitrate (ONO^{2-}). Plasma particulates are highly reactive and that reactivity readily forms bonds with any reactive site. ROS reactions can lead to significant alterations in the function of reactant molecules, but they do serious damage the cell Genome. The literature acknowledges the erratic nature of ROS in cellular homeostasis. Under controlled levels, ROS play a beneficial role in signalling pathways that regulate cell apoptosis and the elimination of damaged or cancerous cells. However, when ROS levels exceed the normal physiological threshold, particularly under conditions of oxidative stress or chronic hypoxia, they damage cell processes. Excess ROS can escape the confines of the mitochondria and wreak havoc on other cellular components, including nuclear nDNA the RNAs and other sol contents like proteins and lipids [78-83]. This oxidative damage can disrupt cellular homeostasis, leading to a cascade of events that promote and amplify mutagenic and oncogenic changes. Such changes are implicated in the initiation and progression of multifocal tumours, as well as in the promotion of metastatic tumour spread, thus playing a significant role in the complexity of cancer biology.

Figure 12: The Guanine Base on the nDNA appears to be the most reactive to ROS

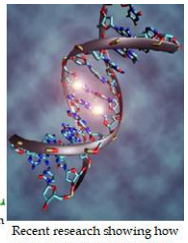
The best studied base to receive oxidative DNA damage is Guanine. Its low oxidation potential makes it particularly susceptible to singlet oxygen, leading to the formation of 8-oxo-7,8-dihydroguanine (8-oxoG). This reaction is estimated to occur on average about 100 to 500 times in each human cell's genome per day. Oxidization of guanine may also occur in the nucleotide pool. 8-oxoG could then be incorporated into nDNA during replication. Fifty odd

years ago the Author presented a Thesis on how environmental poisons could damage eg. The Guanine stereochemical base structures to corrupt the information contained in the codons of the nDNA. See Fig 3. Distorted reactive sites misrepresent the codon information mRNAs are trying to copy so that ribosomes can link the correct elements into the chains they produce but misrepresented information results in corrupted proteins etc that cannot fulfil their intended purpose. The mechanics of generating required materials for cell function become dysregulated to lead to cancers. Only recently has science confirmed the stereochemical disruption of nDNA [84] and it is now considered that chemotherapy destroys cells by interacting with the base molecules to disrupt the hydrogen bonds and distort the base stereochemistry of DNA and corrupt the information contained in the hydrogen bonded codons. Platinum, (Pt), (Hg), ROS and other environmental poisons are shown to react with the nDNA to corrupt cell functions. The problem for clinicians is that injecting poisons into the body to kill cancer cells also kills normal cells, for there is no selective interaction between heavy metals and cancerous and normal cell nDNA. It is left to clinical judgement to "do no harm" when treating patients with poison substances.



nDNA strand showing hydrogen bonding between base pairs. Disruption of the hydrogen Bonding disrupts the stereo-Chemistry of the codons

Fig 13



Recent research showing how Metals can react with nDNA Bases to disrupt the stereo-Chemical codon information

Fig 14

The intricate interplay between ROS and microRNAs (miRNAs) is an increasingly important field of study, because miRNAs play a vital role in gene regulation. These small non-coding RNA molecules can bind to messenger mRNA to influence gene expression by either inhibiting translation or promoting mRNA degradation. This regulatory function places miRNAs at the heart of numerous cellular processes which if corrupted, can exact damage to many biological processes so their interaction with ROS is crucial in understanding the molecular aetiology of cancer. ROS, as byproducts of cellular metabolism, can inflict damage on cellular components, leading to mutations and genomic instability. When ROS levels exceed the cellular antioxidant capacity, oxidative stress occurs, which can lead to the corruption of miRNAs. This corruption, can alter the normal regulatory functions of miRNAs, potentially causing the deregulation of gene expression patterns that are critical in cancer development and progression. The mechanics of ROS-induced damage are complex. Mitochondria, the powerhouses of the cell, can leak ROS, which may then diffuse throughout the cell cytoplasm and migrate into the Nucleus of the cell to interact with genomic nDNA. Plasma particulates can also diffuse through the cell wall and enter the interstitial space to further damage extracellular components (see Capillary Bed). If this interaction leads to the incorporation of erroneous information into the nuclear DNA sequence, mutations can be propagated to all daughter cells, to induce changes that classify cancer as a genetic disorder. Moreover, if ROS permeates the cell nucleus and directly interacts with DNA, it can disrupt the hydrogen bonds that stabilize the DNA structure. Such disruption can lead to a 3D structure deformation of the base sequence and their relationship to changes the shape and form of DNA codons, which, when transcribed by mRNA, results in the transfer of corrupted information that ribosomes cannot codify correctly, and that leads to dysregulation of cell

processes. The location of ROS-induced damage to the nDNA within the nuclear genome is a determining factor in the type of cancer that may develop. The variability in ROS damage on different genomic regions [86-91] reflects on the complexity of cancer as a disease and makes clear as to why clinical symptoms vary so much and are so confusing to make oncological diagnosis so generic. Precise diagnostics may be possible once AI analyses become available because artificial intelligence programs will make judgements based on a vast depository of facts not manipulable by clinicians. The relationship between ROS and miRNAs is a critical aspect of cancer biology, offering insights into the mechanisms of tumorigenesis. MicroRNAs (miRNAs) are pivotal regulators of gene expression that can interact with ROS to promote cell contents dysregulation and the collapse of the cellular order. MiRNAs play a crucial role in various cellular processes, including those related to oncomiRs or to tumour suppressor miRNAs, they can promote or inhibit cancer, respectively. OncomiRs can contribute to cancer progression by enhancing cell proliferation, survival, invasion, and angiogenesis, while tumour suppressor miRNAs can counteract these processes by inhibiting them. The dysregulation of miRNAs is a significant factor in cancer development, affecting key pathways and gene networks involved in maintaining cellular homeostasis. Oxidative stress is a critical factor that influences miRNA function and expression. It can lead to the upregulation of oncomiRs or the downregulation of tumour suppressor miRNAs, thereby contributing to cancer pathogenesis. Oxidative stress can induce DNA damage, which in turn may affect miRNA transcription and processing, leading to altered miRNA expression profiles. Such dysregulation can directly target genes involved in antioxidant defence or those responsible for producing ROS, thus impacting the cellular redox balance. The interplay between miRNAs and oxidative stress is complex, as miRNAs can regulate the expression of genes that are directly or indirectly involved in the cellular response to oxidative stress. For instance, miRNAs can target and modulate the expression of ROS-detoxifying enzymes, which play a vital role in mitigating oxidative damage. Conversely, oxidative stress can influence the biogenesis and function of miRNAs, potentially leading to a feedback loop that exacerbates cellular damage and disease progression. In the context of cancer, the modulation of miRNA expression by oxidative stress can have profound implications. For example, the alteration of miRNA profiles can lead to the activation of oncogenic pathways or the suppression of tumour suppressor networks, thereby promoting uncontrolled cell proliferation and tumour growth. A very substantial confused mess that is difficult to keep track of and even more confusing because many people are working on the problem and conclude findings dependant on "their" research methodology. As an attempt to summarise this research it becomes obvious that miRNAs are integral to the regulation of gene expression in cancer, and their interaction with oxidative stress is a key area of research that could lead to breakthroughs in cancer treatment. By understanding the intricate relationship between miRNAs, oxidative stress, and cancer, scientists and clinicians can develop novel strategies to combat this complex disease but, in the meantime, cancers claim lives.

Treatment

Too slowly, given the considerable amount of information on alternative treatments for cancer, medicine is beginning to use the Low Intensity Pulsed Ultrasound (LIPUS) and Radio Frequency Ablation (RFA) for their potential in targeting cancer cells. LIPUS, traditionally used for bone healing, has been explored for its effects on cancer cells whilst RFA, is a useful treatment for certain types of cancer, such as liver and kidney tumours, using heat to destroy cancer cells. Other minority research is looking at using ultrasound to selectively target cancer

cells by ultrasound excitation of natural resonance frequency but none of the resonant technology is being developed as a means of replacing the dangerous and expensive treatments currently specified. Doctors are actively prevented from using methodology that is not approved by the People paid for policy making bodies like the FDA. Otto Warburg, a hundred years ago discovered the basic facts about cancer biochemistry and yet his research demonstrating that cancers are cytoplasmic dysfunctions and not genetic disorders, is not being applied for the benefit of patients? Several other notably useful methods are being prevented from being used and the case of the Antineoplaston therapy, which involves the use of peptides and amino acids to cure even the most extensive cancers is being smothered. Stanislav Burzynsky's Immunotherapy system has shown remarkable results curing even cancers abandoned as hopeless by the medical profession but scandalously he is hounded through courts of Law to stop him using this effective treatment. Nefarious interests use the people paid for Laws to prevent patients from benefitting from proven treatments that are not controlled by Big Pharma. Other treatments including the ESSIAC Herbal Medical treatments which showed notable remissions in cancer are prevented from being applied. The State moved in and closed down the clinic as the effectiveness of the herbal treatment spread and cues of patients from far and wide deluged the clinic. Many decades later, there are still many former patients who visit Caisse to thank her for the herbal treatments she administered and which cured patients of their cancers. It was with the resonant characteristics off mass, discovered by Keeley, Rusel, Tesla et al, that another rare innovative talent emerged as Dr Royal Raymond Rife [92] experimented with and refined the use of resonant technology to treat cancer patients as far back as the 1930s. Rife identified the fundamental frequency at which cancer cells vibrated and used the same frequency to increase the vibrational displacement of diseased tissues, destroying all the viral particulates causing the problem to cure all his patients of cancer. Dr. Rife's pioneering work showed that cancer cells could be destroyed by matching their vibrational frequency, a concept that was revolutionary in the treatment of cancers and way ahead of its time, but the Powers that smothered his research, ransacked his laboratory, stole his equipment and he ended up dead? The resonant research disappeared and Big Pharma went on to dominate treatment protocols. Resonant technology has been known about for a long time and magicians and other entertainers used to shatter glasses by subjecting them to the identified fundamental resonant frequency of the glass objects and then shattered them by applying an increased vibrational displacement. The principles are clear and well understood and simply involve sound energy being directed at the glass at the given frequency. The vibrational energy interacts with the glass object to generate molecular vibrations which stretch the molecules making up the object. Increasing vibrational displacement of the material breaks molecular bonds when the energy input exceeds molecular bonding characteristics.

Figure 15: Glass subjected to a resonant frequency bombardment that exceeds the molecular bond characteristics of the glass material

In contrast, Dr. Holland's approach, which involves using specific frequencies to rupture cancer cell membranes, represents a recent exploration of bio resonance therapy. His experiments at Skidmore College show promising results in laboratory settings, with claims of up to 60% destruction of cancer cells. The challenges faced by Dr. Holland are too common and includ the curtailment of research funding, deliberate obstruction in testing and approval

of research findings and a fearful wrath of the money men who seem intent on preventing anything that will interfere with their profit margins. Independent research into resonant frequency technology like Dr. Rife, Dr. Holland, John White and the many others who invested huge amounts of energy, effort and money into refining discoveries that could change the landscape of cancer care are hounded and prevented from presenting their findings for clinical application. The potential for non-invasive and non-pharmacological cancer treatments that are cheap and side effects free, is an exciting prospect that many people are trying to achieve. Dr Anthony Holland, a Music Professor in the USA with detailed knowledge of vibrational characteristics of sound waves, started to experiment with vibrational energy as a means of destroying cancer cells. He was eventually invited to a well-established medical research facility where he demonstrated by using frequencies of 100000Hz to 300000Hz that cancer cell membranes can be ruptured, to destroy up to 60% of the newly formed daughter cells. Such non-invasive, non-pharmacologically based treatment is far superior to anything current chemotherapy or accepted treatments can offer. As the research progressed and the data showed very considerable success with his 11th harmonic bombardment, the research grant money run out and the Group was shut out and no longer have the resources to continue the research and transfer the findings to clinical applications? Once established the cost of clinical application of the technology would cost the price of used electricity and that means pennies rather than the tens of thousands of pounds needed for Chemotherapy, Radiation or Surgery currently used!? Images below, show cancer cells being ruptured by frequency bombardment.

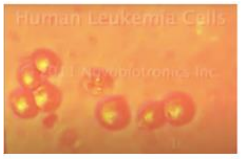


Fig 16
Leukaemia cells before treatment

Fig 17
Same cancer cells destroyed by Resonant bombardment

Leukaemia cells shattered and destroyed. 60% of cancerous cells broken up by fundamental frequency bombardment. The Author is currently working with a Chinese Company [93] to further refine and apply reinforced vibrational knowhow for the treatment of very many medical conditions. Indeed, the resonant treatment of disease is unstoppable as many researchers are working to refine the knowhow and in time to come, resonant reinforcement technology will replace most of the pharmaceutical drugs currently in use. Most recently, a remarkable effort by a New Zealand researcher John White, unable to work in New Zealand, set up shop in China and created the most useful Resonance Frequency treatment facility available. His 60000 plus tested frequency collection is the largest and best in the world and has become the standard for resonant frequency reference. He manufactures and distributes software and hardware to apply his reference frequency sets and does research on the usefulness of frequency bombardment in treating many medical conditions. The equipment uses the latest electronic computer processors and best quality solid state electronic hardware available delivering considerable effectiveness in eradicating microbiology and improving various other conditions. As the available equipment is further refined it is expected for this to be the start of a new way of treating medical conditions. Completed research into the efficacy of resonance frequency bombardment used to destroy microbiology has been confirmed in the Study of the anti-pathogen efficacy of Spooky2 device (contact mode). In these experiments, microbes were identified using the SP2 Biofeedback Scans (BFB) sample

digitizer, to acquire the corresponding frequencies for each microbe experimented with. Scan results are shown, Quote:
S. aureus: 117320.58, 153952.36, 601278.41, 130210.67, 393304.69, 108152.29, 162169.16, 184612.1, 134764.19, 188411.91.
E. coli: 15566161.65, 15577839.92, 15591475.64, 15614878.94, 15603172.9, 15697067.48, 15626593.76, 15648093.76, 15710807.56, 15659833.5.
C. albicans: 414037.43, 394782.26, 4026646.69, 1645204.81, 1464841.64, 559230.99, 5264136.86, 121089.9, 369153.87, 7893320.34.
Samples of each microbe were subjected to resonant frequency bombardment for 30 minutes and the number of remaining viable microbes counted. A contact mode method (conductive pads adhered to the dish) was used to deliver the identified frequencies to the experimental medium. See Table 1.

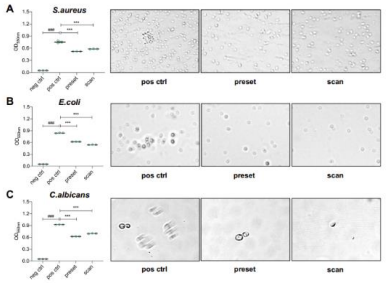


Figure 18.
The antimicrobial effects of Spooky2 (contact mode). Spooky2 treatment using contact mode was performed on (A) S. aureus, (B) E. coli and (C) C. albicans for 30 min per well decreased viable S. aureus, E. coli and C. albicans by about 22.9%, 35.4% and 24.4%, respectively. Shown is the analysed OD550nm of each group and representative images, neg ctrl: negative control (medium); pos ctrl, positive control (microbes without treatment); preset, microbes treated with the preset frequencies in the database of Spooky2 software. Scan, microbes treated with frequencies acquired by biofeedback scan. Mean ± SD. n=3. ###P ≤ 0.001 versus neg ctrl; *** P ≤ 0.001 versus pos ctrl. Magnification: 200×. The Spooky2 "contact" transmission treatment using the frequencies acquired from preset database is potent in decreasing the viability of the gram-positive *S. aureus*, the gram-negative *E. coli,* and the yeast *C. albicans*. Laboratory testing of microbiology identified the DNA strain-specific fundamental resonance frequency for each Pathogens were used: *S. aureus*: BL2826240,43245000, *E. coli*: BL5186994, BL310 and *C. albicans*: 1934BC55757, ~2598BC50761, ~3987BC69393, ~1748BC00409. The frequency bombardment confirmed that the Spooky2 contact transmission treatment, using the frequencies acquired from preset database or biofeedback scans are both potent to decrease the viability of the gram-positive *S. aureus*, the gram-negative *E. coli,* and the yeast *C. albicans.* Bombarding microbiology with fundamental frequency vibrations does destroy microbiology and as the Holland cancer cell research shows, there is a very substantial reduction in viable microbiology after the first 30 minute of treatment. Such results are by far, the most outstanding eradication of pathogens available, far outperforming the very best of the pharmacological treatments. Notably, the treatment is irreverent as to the fact that the microbes might be Multiply Antibiotic-Resistant Strains (MARS) without any side effects!
The Spooky2 system, which John White has developed, is a comprehensive platform that not only provides the hardware and software for frequency treatments but also serves as a well-established foundation for ongoing research into the efficacy of frequency bombardment for various medical conditions and wellbeing of the entire body. The exploration of alternative

antimicrobial treatments for strains that have become Antibiotic Resistant, consolidates the concept of bio resonance therapy. Exposing pathogens to their fundamental resonance frequency and enhancing the extent of the vibratory displacement, imposes stresses on their biomolecular constituents and structures to disrupt biomolecular functions and rip apart tissues to destroy cells. A major problem exists for researchers refining systems that use fundamental resonance reinforcement to destroy microbiology in that structures being subjected to vibratory displacement are pliable and absorb energy. In practice, such absorptions lead to a reduction in the energy actually available to stress tissues to destruction so that bombardment of treated areas tends to be prolonged to be effective. To overcome the problem the Author [94] is working with SP2 engineers to reinforce the fundamental frequency by applying several frequencies, synchronised to the nodes of the fundamental frequency, to reinforce the energy being delivered to target tissues. Considerable success has been achieved using all seven frequencies, superimposed on the nodes of the fundamental frequency and synchronised, to bombard target tissues with seven (7) energy parcels (Fig 19) at once. The oscilloscope tracings (Fig 18) above show that in practice, the Tesla 3.6.9 Ratio is applicable for controlling the energy characteristics of fundamental frequencies.

Fig 18
Oscilloscope trace for the 3,6,9 waveforms

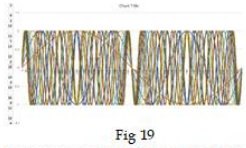


Fig 19
Superimposed calculated Tesla 3,6,9 frequencies synchronised with the 1st, 2nd and 3rd nodes of the fundamental frequency

Curtesy of John White SP2 China
Tesla 3, 6, 9, Ratio, synchronised vibrations with the 1st, 2nd and 3rd nodes of the fundamental frequency.

A bright future awaits the optimisation of the resonance frequency treatments and the use of the Nikola Tesla 3:6:9 frequency enhancement methodology has been adopted and is being used by the SP2 treatment protocols (see, SP2 Settings Page, Waveforms Fig 21).

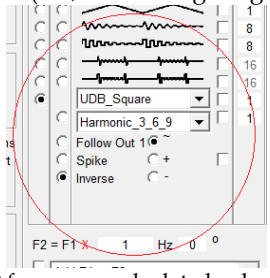


Figure 21: 3.6.9 frequency calculated values synchronised to the fundamental node positions in use by SP2 China

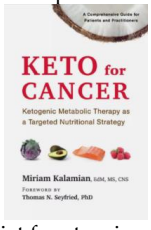


Figure 22: Keto Diet for starving cancer of Glucose

The controlled cancer treatment protocols prevent doctors from starving cancers of their energy source which is shown to be reliant on glycolysis. The metabolic cancer treatments starve cancer cells of their carbohydrate end product by specifying a Ketogenic Diet, which contain no food substances that can be digested to glucose that cancer cells depend on. Cancer spread is held in check by depriving cancers of the essential energy required to metastasise and many patients continue to live active lives with dormant cancers. The Ketogenic Diet is proving a great success and yet the medical profession is not using this safe and effective treatment to extend patients' lives? This treatment has proved to be very useful in containing cancer spread and is particularly useful to a society that loves good food and to guzzle "pečenje". Given the many reports of the very successful containment in the spread of cancers reported by patients on Ketogenic Diets, it needs to be asked as to why Oncology Specialists have not established Dietician Based Departments, to provide patient ketogenic diet regimes. Controlling energy intake to exclude carbohydrate end product, the essential cancer energy making raw material is shown to have a very considerable effect on survival rates but the optimisation of the food intake does need to be overseen by specialist dieticians who can ensure that hypoglycaemic conditions are met. The administration of cancer treatment is woeful in that the organisational effort is chaotic and ineffective because treatments are controlled and based on the foundation that cancer is a genetic disease. What is needed, is for every means available to be used in an effort to cure or at least contain a disease that is claiming one in every two people. There are tried and tested useful systems for containing cancer and they should be available and used but all treatments directed at patient care, must be overseen by the medically trained specialists who have the facilities to monitor the effectiveness of the treatment applied. Modern medicine is very advanced with well-trained medical scientists who have extensive technical facilities at their disposal and are able to assess the state of the diseases they are treating. It is the medical specialists who should oversee the application of resonance technology, the ketogenic diets, the use of modern pharmaceutical medications, and other applied methodology so that they can assess the efficacy of applied treatment by studying the analytical laboratory reports. Medicine needs to reassess the cause of cancer and accept that many cancers are caused by dysfunctional, complex, metabolic processes that can be controlled to extended patient lives. Cancer can be contained!

Discussion

The Thesis presented in this paper provides a Review of the work done over several decades, on detrimental effects that environmental stressors exert on the homeostasis of cells within the capillary bed network. It suggests that various external factors disrupt the intricate balance of cellular mechanics, leading to a state of stress within the cellular environment. This stress compels the cells to adapt and compensate, which inadvertently subjects them to further stressors that change cellular dynamics. Over time, this environmental disequilibrium fosters a takeover by defective biochemical processes, which disrupt normal cellular dynamics leading to a gradual decline in cellular function manifesting through several pathways, including damage to cells that instigate shifts in cellular biomechanics that deregulated cell growth. Impaired delivery of essential components to capillary beds leads to an accumulation of toxic substances in cells that precipitate physiological failure of cell homeostasis, stressing biochemical processes in cells. In compromised circulation of the capillary beds hypoxic conditions are generated which particularly in advanced age, hasten the deterioration of biological functions of tissues and escalate the rate of cellular decay. In response to such persistent stress, cells modify their functions to avert death and in doing so set off a chain

reaction that results in deregulated growth and Metastasis. This paper is working to explain the importance of maintaining environmental equilibrium in the capillary beds in the effort to continue biochemical balance that reflect healthy cell environments. As a student of Chemistry, the author thought he understood the processes of faulty cell mechanics resulting from environmental pollution and settled on the Thesis that the DNA of cancer cells had become corrupted because physical and chemical environmental factors ware damaging the DNA Base Sequence structure. Damage in the DNA relates to the disruption of the electromagnetic fields of the nucleobases, which are fundamental to the integrity of genetic information specified in the 3-dimensional linkages of the codon sequence. The proposed disruption of the stereochemical relationships leads to a deformation of the hydrogen bonds that stabilize the DNA structure.

Deformation of base sequence stereochemistry leads to errors in the transcription process, as the mRNA does not correctly transcribe the information specified in the deformed codon structure, resulting in "Stereochemical Misrepresentation" of codon information. The distorted base relationship manifests in the deregulated synthesis of non-functional products like proteins that are unable to perform their intended roles within the cell, resulting in biochemical chaos and metastatic cell growth. Mechanisms damaging cell functions which are caused by structural changes do not respond to antibiotics so that current medical treatments resort to a scorched-earth strategy of destroying both diseased and healthy tissues in an attempt to control the spread of the deregulated cells. The exploration of such a Thesis in the Chemistry discipline, underscores the interdisciplinary nature of modern scientific research, where chemistry, biology, environmental science and other considerations converge, to unravel the complexities of diseases like cancer. It also emphasizes the importance of understanding the fundamental processes at the molecular level to devise more effective and less destructive treatment strategies. The pursuit of such knowledge could lead to breakthroughs that not only improve cancer treatments but also offer insights into the prevention of the disease by mitigating environmental factors that contribute to its onset.

Long-smothered methodology is better at treating physical damage to cells and the use of electricity in medical treatments is a long journey of experimentation with poorly understood phenomena. Many researchers have claimed all sorts of benefits related to its use. It first emerged when Johann Gottlob Krüger in 1743 recorded the use of electric current, to treat a patient who showed relief from their condition. Miraculous stories of cures led to a rapid adoption of the methodology which was enthusiastically practiced by quacks and entrapped the learned like Dr. John Wesley [95] who eulogised about the curative effects of electric currents and published his first book on the subject in 1747. Many people since have tried using electricity to cure all sorts of conditions including Franklin, Brunet, Marley, Jacques de Romas, Prokop Davish et al, who experimented with medical procedures using electricity but none delivered the Panacea electricity was promoting. Despite the controversies, electrotherapy found a place in physical therapy management for muscle rehabilitation and pain relief where transcutaneous electrical nerve stimulation (TENS) have proven beneficial.

The preoccupation with using the poorly understood effects of electric current on sick people continued and was experimented on even to treat psychiatric conditions and in 1823–1824, Giovanni Aldini [95] treated insanity with static electricity. Indeed, the preoccupation with using electricity to treat psychiatric conditions continued into the 20th century when psychiatry experimented with electric discharge through the brain in a treatment that generated Unipolar and Bipolar Shock Convulsions, wherein Psychiatrists subjected psychiatric patients to electroconvulsive shock therapy in an effort to cure depression? Current understanding of the effect of electric current therapies is confined to temporary

"Placebo Effects", a well-documented phenomenon where a patient's belief in a treatment's efficacy can lead to perceived improvement. However, the same effect is achieved by Aquapuncture treatments and other "displacement pain" therapies that basically preoccupy the brin with signals coming from treated areas to shut down signals from other parts of the body. None of the electric current treatments actually cure medical conditions and the ECT treatments were abandoned in 1950s. The need for rigorous scientific validation and ethical considerations in the adoption of new medical technologies and treatments is accepted. John Keely [96] an American Innovator, discovered and developed the science of Sympathetic Vibratory Physics, believing in the existence of fundamental force based on the 3,6,9 vibratory resonance. Nikola Tesla further developed the knowhow and also ended up believing that understanding these elements could unlock the secrets of the universe and have a profound impact on our comprehension of the world we live in. Tesla's work on the synergic control of vibrational energy applications ended up influencing modern technology and scientific applications that are currently being refined [97-100]. Tesla developed the synergic control of vibrational energy applications and used it to control the energy of the fundamental vibratory energy he was working with and experimented with causing structural collapse of buildings and even generated localised earthquakes [101]. He became convinced that by understanding "energy, frequency and vibrations" that all the phenomena in the Universe could be understood, meaning that everything in the Universe has a fundamental resonance frequency to which it responds. That cornerstone of Tesla's philosophy has wide ranging implications from physics, structural engineering, medical imaging, quantum computing and holds promise for revolutionary technological advancements that could transform the efficacy and cost of treating medical conditions like cancer. Emitt a given frequency and when the frequency identical to the fundamental frequency of the object to hand is matched, the object absorbs the vibrational energy and begins to vibrate in sympathy with the source. The author's Thesis [94] on Tesla's work on the 3, 6, 9 applications puts forward the mechanics of how this vibratory Ratio might work. As an example of alternative treatments for various diseases, the excellent results obtained by the electrotherapy treatments researched by Anthony Holland, and the outstandingly effective frequency range of the Spooky 2 Establishment and many others systems using bio resonance therapy are showing great premiss. But despite Holland's work, clearly and scientifically demonstrating effectiveness in destroying cancer cells in vivo, his research has been smothered and his team has had to stop their research due to lack of financial support? The Spooky 2 facilities carry public Notices addressed to the all-powerful FDA, to state that their treatments are labelled as "experimental only"! The cost of the Holland and Spooky 2 treatment protocols cost pennies and once the very affordable treatment facility is set up, the cost of these treatments is related to the cost of the electricity used to power the equipment but most importantly bio resonance offers treatment that is non-invasive and has few side effects! The medical profession is indeed governed by the principle of "primum non nocere" ie. first "do no harm", and is understood by all patients being treated. No patient undergoing treatment should ever be concerned at what is being done for them. The patient must be confident that all those involved in treating them medically, are there to do what can be done and to do it to the best of their ability, working on the best information available. This ethical directive must be at the heart of medical practice, upholding the fundamental commitment to patient safety and well-being and not only because medical practitioners are privileged to be given the opportunity to practice their vocation on people. The FDA is constantly looking for a way to hunt down all and every effort by non-Big Pharma providers, to treat sick people by non-pharmacological means but even the Homeopathic protocols, that so many chronically ill people found very useful, was abolished in medical school curricula.

There is considerable concern over the way Political Power and financial prowess is exerting on scientific research and the way the Regulatory Bodies have become subservient to big money, preventing the use of many helpful treatment plans that are helpful to many. Having said that, the need for rigorous scientific research and clinical trials for all medical interventions is essential, and their enforcement is of course accepted. Medicine is a complex science and involves procedures that subject human beings to measures that are invasive and potentially damaging and so the Medical Profession is subject, to the "Do No Harm Oath".

It is difficult to grasp but there are powerful interests in control of social administration that is not only willing to participate in profit making at the expense of people but who are reported to be actively conspiring to defraud people by corrupting diligently established controls. It is reported that there are pharmaceutical interests which deliberately controlling medical protocols with the intention of creating customers and not curing medical conditions? The policy is to treat symptoms of disease and not its causes with very expensive pharmaceutical formulas and machinery that extract billions out of social funding? The cancer industry is reported to be generating about 170 billion each year?

Information is being suppressed and objectors discredited by powerful control over information. Astonishingly, the abuse by the Power Base is so blatant that those in control of pillaging social resources are paying key personnel [102, 103] in the administrative structure, to misrepresent the true state of affairs in a public health issue? Taxpayer's money being used to terrify the taxpayer!? In the recent Covid Pandemic, vast sums of money are said to have changing hands in falsifying medical records, to confuse the issues relating to the actual threat posed by the virus. There were reports in the UK Press about a scandalous abuse of social funding relating to the terror exacted by the fear factors, wherein hospitals, selected doctors, administrators etc were instructed to falsify deaths certificates for Covid and as a result, the pharmaceutical companies producing Covid Vaccines profited in billions. Reports of Pharmaceutical Boards of Directors celebrating best ever profits, even when advised and knowing that the vaccines were causing harm and deaths, were rife? There is in the mind of the ordinary citizen a general feeling that they are being robbed and used by some Mafia or other and the loss of trust is palpable. There is no mechanism in society to identify corrupt interests and abusive individuals who profit at the expense of the sick. No one has been held to account for accepting payment for corrupting medical care and abuse of power as the social care system drifts into collapse [105]. There is no disclosure, no transparency and no accountability to the tax payers and so the people have no idea who is profiting at their expense. The "People" do not want to be administered by such prowess. The structures established to administer affairs on behalf of the People seems to have been corrupted and organisations like the FDA seems to be influenced in their control over what is harmful to people. As an example only, it has for over 60 years, been ignoring the fact that the Law has clearly stated that food and colour additives that induce cancer in humans and animals cannot be deemed "safe" for use in food. But the FDA has kept approvals of chemicals that were known to cause multiple forms of cancer decades ago. It has disregarded the Law by permitting these long-established carcinogens to be added to food and indeed, the use of many substances known to be harmful like mercury (Hg), continue to be used on people? Extraordinary then that the FDA is vigorously pursuing and shutting down researchers who are using treatments that have a substantial and beneficial effect on reducing people's suffering?

Conclusion

Treatment of cancers continues to be based on the concept that cancer is a genetic disease and patient care is limited to the long-standing Surgery, Radiotherapy and Chemotherapy, all treatments being directed at eradicating genetically based disorders. Considerable published material, demonstrates that environmentally stressed homeostasis from polluted cell environments, promote biochemical processes directed at cell survival but which end up dysregulating cellular dynamics to destroy cell identity and its functionality as cells become cancerous. Cancer cells no longer perform their biological functions nor are they effective in repairing their damaged homeostasis. The administration of cancer treatment is woeful in that the organisational effort is chaotic, ineffective and subject to financial controls what seem to be nefarious, interests. What is needed, is for every means available to be used in an effort to cure or at least contain a disease that is damaging one in every two people's lives. There are tried and tested useful systems for containing cancer and they should be available and used for the benefit of the patient but all treatments directed at patient care must be overseen by the medically trained staff. Modern medicine is scientifically very advanced with well-trained medical scientists who have extensive technical facilities at their disposal to help assess and monitor the state of the diseases they are treating. It is the medical specialists who should oversee the application of resonance technology, the ketogenic diets, the use of modern pharmaceutical medications and the like, so that analytical laboratory facilities can test and monitor progress in containing cancer. Medicine needs to reassess the cause of cancer and accept that many cancers are caused by dysfunctional, complex, metabolic processes that can be contained to extended patient lives to cure or at least make cancer a chronic disease. Even though there was clear evidence about a 100 years ago that cancer was a metabolic disease, big business, politics, money, continue to control public health issues by imposing treatment protocols that protect vast profit-based cancer care programs. The Cancer industry is worth billions each year and the drug manufacturing Mafia seems to be in control of the political power base, elected to serve the interests of people and society. It is the elected structure that corrupts the use of the Law of the Land, to abuse legal power to shut down and prevent the use of effective medical treatments that are not controlled by Big Pharma. Cancer drugs are the most profitable of Big Pharma products and they are investing large sums of money protecting vast profit margins generated by cancer drugs, in the process, exhausting and holding entire societies to ransom with the cost of medical prescriptions. Not only does the Big Pharma Mafia prevent the use of known useful cancer treatments but it actively smothers scientifically based discoveries which are demonstrating that cancer is not a genetic disease. Cancer is a mitochondrial, metabolic disorder that can be contained and even cured by depriving cancer metabolism of its dependence on the provision of simple sugar as a source of energy. In order to protect healthcare from corrupt controls, all matters relating to people's health must be nationalised so that there are no incentives to keeping people sick.

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