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# Recent Developments on Cancer Therapies and its Causes: A Revolutionary Approach

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## Abstract

Cancer is considered in our time another epidemic and terrifies people more than anything else: just because it implies painful and destructive evils. In one word: Death in itself "is a particular form of perishing and is contrary to life". It is a Latin word translated by the Greco-Roman philosopher Celsius about 47 A.D from the Greek word, karkinos, named by Hippocrates, who judged from the nature of 'crabs': their bites and their consequences. As such, it has a metaphorical meaning. Tumour, again, is translated from the Greek word, ogkos, meaning 'swelling' or 'mass' and a tumour contains billions of small cells ($10^9$ cells/$cm^3$). For the same reason I will examine hereafter, some of the orthodox approaches and a new approach which is being developed in America and introduce my own approach. The first part overviews some of the new practices used against cancer while showing their implications; the second part shows the reality of cancer (its scale) on the world population and examines the meaning of the WHO on the causes of cancer and some new approaches; and finally, the third part introduces the meaning of 'motion' and shows the nature of cells and food in order to help the fight against cancer.

**Keywords:** Food and Drug Administration; Cancer; Gene therapy; Tumour cells

## Introduction

### Physicians and corporations in the frenzy of profiting from "cancer therapies": implications and crimes

The Food and Drug Administration of America approved a treatment that supposedly reboots a patient's own immune cells to kill cancer. It is being considered a "therapy" and uses drugs or genetic tinkering to turbocharge the immune system to fight the disease [1]. But it causes side-effects that can be life-threatening (high fevers, crashing blood pressure, lung congestion and neurological problems) [2]. Of course, once the drug was developed and controlled by a private company (Kite) in cooperation with the federal government's principal agency (NCI) through the PPP concept despite the fact that two patients died during the same period and their results to other patients are very uncertain as only 54 per cent had complete remissions (their tumours disappeared) and another 28 per cent had partial remissions (tumours shrank) without being certain whether tumours will reappear or not!

The process of killing tumour cells is long and very contradictory: it removes millions of T-cells, freezes and ships them to the company (Kite) to be genetically engineered to kill cancer cells. Once reprogramming them - they are frozen again and shipped back to the hospital to be dripped into the patient! The same company aims at producing cell therapies for solid tumours like the lung, prostate, breast and colon, which account for about 90 per cent of all deaths from cancer. It has applied for approval in Europe, and if granted, it will build a plant there too [3].

Another "gene therapy" is being developed by another company: "Spark Therapeutics". It replaces the faulty DNA that is causing the disease and helps the body to fix it. But only for the eye: because it is a closed system that gives to the biological equivalent a free pass by the immune system-meaning that the danger is greatly reduced. To this "therapy" have invested billions of dollars big pharmaceutical groups such as Novartis, Sanofi, Bristol-Myers Squibb, Pfizer et al. Wall Street investors snapped up its shares by sending the stock up almost 70 per cent in large part because of promising data from the haemophilia trials. And since healthcare systems tend to look at the cost of a treatment in aggregate rather than per person, analysts predict that the products will generate millions.

But when a virus or any other biological substance is inserted directly into the body, our immune system tries to destroy what it identifies as an invader. In the best case scenario, the virus is destroyed, rendering the intervention pointless. In some instances, the response can be so dramatic as to prove fatal, as in the case of an 18 year old boy suffering from a liver disease, who died four days after he was given an experimental "gene therapy" during a clinic trial. He suffered a catastrophic immune response to the virus used to deliver the genetic material.

As in the case of cancer, after a period of improvement of the retina of the eye, it deteriorates and nobody knows for certain that it could help people to see. A second trial of the "gene therapy" is impossible since it will cause reaction-as the body might have developed immunity to the virus. Beside this, it has a

tremendous cost: about $1 million per person. All they try to do is to encourage the mitochondria to supply power to those retinal cells that are still alive by inserting a functioning copy of the responsible gene. In this case they're using to convince people with a pair of children who had a high degree of "immune privilege"-meaning they were able to tolerate the introduction of antigens without eliciting an inflammatory immune response [4]. For this "scientific breakthrough" have been destroyed hundreds of eyes from dogs as their eyes are the same in size as our eyes.

Another "breakthrough" is the "nuclear medicine". It is being used from 'inside out' or endo-radiologically on top of other sources of radiation we receive, to treat tumours through radio pharmaceutical products which contain radioisotopes and are used clinically for both diagnosis and therapy of tumours. In effect it exposes our cells to radiation, which, according to physicians, poses 'little' or no risk [5]. How 'little'? They don't tell us! The only 'story' they tell us is that we are exposed in radiation anyway! The "blood test" for cancer, on the other hand, a recent "discovery" by some 'scientists', does not prevent cancer since it just follows the mess of a body to "cure" it after the event has occurred!

The same might be argued for those researchers who want to prevent gliomas (tumours that start to develop in glial cells of the brain or the spine) in the optic pathway. A research argues that "NeuroFibromatosis type 1 (NF1) affects one in about 3,000 people worldwide, and is caused by a mutation in the gene of the same name. Individuals with the NF1 gene mutation are predisposed to early-childhood development of slow-growing (low-grade) tumours called gliomas along the optic pathway-the nervous pathway that includes the optic nerve and that carries visual information from the light-sensing cells of the retina to the brain" [6].

But they work on mutated cells (NF1) instead of seeking the causes of mutations; for they arise, argues an analysis, spontaneously at low frequency owing to the chemical instability of purine and pyrimidine bases and to errors during DNA replication while natural exposure of an organism to certain environmental factors, such as ultraviolet light and chemical carcinogens, also can cause cancer [7]. A purine is an aromatic heterocyclic composed of carbon and nitrogen while a pyrimidine is the same, an aromatic heterocyclic, but of two nitrogen and four carbon atoms. Both are chemicals partaking in the DNA`s replication. Purines and their metabolic effects have been studied [8].

## Materials and Methods

Mutations occur, in other words, from interior factors such as the instability of purine and pyrimidine bases and errors during DNA replication; and exterior factors such exposure to sunlight and chemicals. But from those the interior factors are the most important as they are 'preconditions' from which the replication of cell`s DNA depend. For example, mutations caused from the exterior factor of smoking in the case of those who smoke and those who are passive in smoking, in their lung-cells [9], are indeed caused by chemicals of smoking but had there been sufficient amount of purine and pyrimidine, they might recover from those chemicals. This fact shows us another fact: that those who smoke and do not suffer from cancer in their lung-cells recover because of their diet or because they provide their body with foods rich in purine and pyrimidine. The same might be argued for those who do not suffer skin-cancer. The purine bases are adenine and guanine and pyrimidine bases are cytosine, uracil, and thymine. Purines can be formed in water under abiotic conditions from simple precursors and are ubiquitous in living organism, present in nucleotides, coenzymes and in nucleic acids.

Pyrimidine's are structural components in many natural compounds such as nucleotides, nucleic acids, vitamins, pterion's, and antibiotics. Both purines and pyrimidines are needed by the cell in approximately equal quantities in order to form DNA and RNA. In the case of a replication of a new cell they must be present in the first cell in order to produce a new cell without mutations in its DNA. The total daily requirements from all sources for purines and pyrimidine in human adults have been estimated to range between 450 and 700 mg/day. Legumes, nuts, cereals and cereal products have the highest content and vegetables and vegetable products, and fruits have the lowest content and from animals poultry has the highest content of purine [10] while pyrimidine can be synthesised from aspartate, glutamine and $CO_2$. Nucleotides are naturally present in all foods of animal and vegetable origin but in lower concentrations than in mammalian milk. Baker yeasts or yeasts extracts are excellent sources of both purine and pyrimidine nucleotides [11].

Judging from the fact that purines are "ubiquitous in living organisms", as molecular sugars and coenzymes where nitrogen is present, and nucleic acids with which they cooperate, [12] and the nature of pyrimidine's, and the effect of awareness in relation to such an effect of th ose substances and their sources in foods, we can easily prevent such mutations. Thus, they show that neurons secrete a protein called brain-derived neurotropic factor and another called neuroligin-3 that, in turn, stimulate glioma growth. In order to stop such a symptom they used a drug to inhibit the enzyme which releases neurogin-3 from neurons. In mice with the mentioned mutation it prevented the glioma formation. The same happened when mice were kept in light deprivation for 6 to 12 weeks. Judging from their findings they raise the question whether we should tell individuals with NF1 to wear sunglasses or cover their eyes for a certain time or to reduce the overall neuronal activity of individuals with brain tumours, instead of understanding the causes of mutations in cells and the reasons why such proteins stimulate glioma growth.

The lack of knowledge about the power of food and (the biology of) cells is being shown even with the metastasis of cancers [13]: it implies the distribution of cancer cells to other places of a body, for which some researchers suppose that cancer cells might have migrated from the primary tumour to seed various other sites, where they remain dormant for long periods, surveyed by immune cells, for which, the mechanisms involved in the switch from dormancy to the growth metastases have been unclear, and rely on the "pivotal role of natural killer

cells" or white blood cells. They judge from the fact that people, who have more tumour-infiltrating natural killer cells, have fewer metastases. This phenomenon has been observed on those with gastrointestinal sarcoma, gastric, colorectal, renal or prostate carcinoma. They observe that when cancer cells normal regulation is being removed, natural killers protect against the spread of tumours. So "tumour cells entering dormancy down regulate their expression of ligand molecules that can activate natural killer cells receptors, and become resistant to killing mediated by natural killer cells".

Working on a new approach, they observed that natural killer cells have a crucial role in events that block the reawakening of dormant tumour cells while depleting them. So they boosted natural killer cells with cytokine IL-15 (a glycoprotein) in order to prevent the formation of metastasis. The result: tumour cells remained dormant. For the same reason they were convinced that natural killer cells have other and previously unsuspected anticancer capabilities paving the way for the development of cancer treatment strategies that prevent dormant reservoirs of tumour cells from awakening. There are already molecules that strongly stimulate the "interleukin-15 pathway" in natural killer cells while other drugs are being developed [14].

They confirm (unintentionally), in other words, the fact that cancer cells may be controlled by the power of natural killer cells. But because they don`t know how to activate natural killer cells with the power of food, they use drugs which can cause side-effects! Other researchers have made a step forward: they have observed that infected people with severe COVID-19 have higher than normal levels of TGF-β1 (transforming growth factor β1), which is a multifunctional secreted protein or cytokine that regulate generally immune functions in their bloodstream, which impair natural killer cells to act against the infection. Being in such conditions, cells develop "a gene-expression pattern", which "is more prominent in natural killer cells with severe rather than milder forms of Covid-10". As they explain their observation:

TGF-β1 is a cytokine with a central role in tissue remodelling, but it also suppresses the functioning of NK cells1. TGF-β1 limits the ability of NK cells to control SARS-CoV-2 replication as tested *in vitro*. When NK cells from healthy individuals were treated with TGF-β1 *in vitro*, the cells were less able to form connections with infected target cells and were less able to degranulate and produce cytokines [15].

Those with or minimal signs of the disease had low level of TGF-β1 and those with severe symptoms can limit to some extend the *in vitro* degranulation and control the viral replication mediated by natural killer cells and this effect can be prevented by adding an antibody (antisense oligonucleotides etc.) that blocks TGF-β1 and by doing so they prevent lung fibrosis. The same approach has been used for cancer metastases by other researchers [16]. But both of them add safety concerns as such approach might cause adverse effects.

Hence the conclusion of those who tried it on cancer metastases: "due to the pleiotropic (that a single gene affects two or more characters of the cell) effects of TGF-β on both normal physiological function and tumorigenesis, long-term inhibition of TGF-β and the relative signalling pathways may develop adverse effects". And hence their suggestion: "the fine tuning of TGF-β downstream signalling pathway rather than thoroughly eliminate TGF-β signalling at ligand level would be a better strategy toward treatment". But none of them see the effect of such protein in relation to cells inability to use them for energy and most importantly to liver`s inability to catabolize them as it is primary site where almost all amino acids get catabolized.

Another group of researchers is working on controlling brain metastases by inhibiting CSF1R protein of the tyrosine kinase family. They show the "potential risk of unleashing pro-inflammatory responses in brain-metastases upon CSF1R inhibition, while also presenting experimental evidence for a strategy to overcome designing rational combination therapies to disrupt tumour-glial communication", which leads to sustained tumour control in concert with normalization of microglia/macrophage phenotypes rather their depletion". They conclude that "while cancer cells may express low levels of CSF1R, their survival is not dependent on CSF1R signalling and its inhibition rather targets myeloid cells", [17] contrary to an earlier belief of another group of researchers, who argued that "CSF1R represent an exciting new class of immune-modulatory drugs" [18].

Thus, they developed another (or rational) approach as they call it: by blocking CSF1R, combining it with the inhibition of a pathway (STAT5) which "led to sustained tumour control, a normalization of microglial activation states and amelioration of neuronal damage". It is clear, therefore, that they do not fight the causes of cancer; instead, they try to "stop" its march in the brain. But it might be used and be temporary "fruitful" since they have not acquired complete knowledge on the causes of cancer and on the power of food.

Finally, another approach, categorized in "immunotherapies", has been developed recently by using neutralizing antibodies targeting the immune Checkpoints T-Lymphocyte-Associated protein 4 (CTLA-4) and Programmed cell Death protein1 (PD-1). While it has been approved in many countries and improves the health of some patients, in the majority of them, with advanced melanoma, it does not respond and in some cases it responds initially but it relapses! [19] For the same reason, it`s being suggested to use other therapies. From all these practices the last one is a small "hope" as it tries to use the immune system. But it proceeds from a partial understanding of it while uses antibodies without understanding the right conditions in which they work better.

In the case of Alzheimer researchers have improved their understanding; for example, some researches have improved their understanding on amyloidosis or protein misfolding and now are trying to "prevent" it through an "early and conspicuous reduction or stabilization of the amyloid-forming protein in its native confrontation" while showing the cause of amyloid deposits: it "derives from the proteolytic processing of the liver-derived acute phase reactant serum amyloid A and almost invariably affect kidneys" [20].

But they still fight the symptoms of it with drugs (anti-inflammatory etc). while others use in vivo gene editing to treat transthyertin amyloidosis, caused by the accumulation which leads to amyloid polyneuropathy, cardiomyopathy or a combination of both, "with no early signs of severe adverse events" [21]. While in the first case they do not fight the real causes; in the second, they try to change the power of genes in order to fight the same symptoms without changing the power of food!

In both cases, they do not 'fight' the real causes of amyloidosis: the lack of metabolites in one`s food since proteins without metabolites (and a functional liver) cannot be used for energy by our cells; instead, they concentrate outside of cells and cause disease out of it (cytokine storms, cancer etc.). Hence the word 'proteopathy', implying a disease caused by certain proteins, generated by cells, which become structurally abnormal and disrupt the function of cells, tissues and organs. Although their mechanisms in relation to Alzheimer are being explained in one study, [22] and the way they spread within the brain`s connect come in another, [22] their proposals to "prevent" it, are problematic: the first one proposes "therapeutic strategies for AD stemming from the prion paradigm include impeding the production or multimerization of the proteins, uncoupling the pathogenic link between abnormal Aβ and tau, and promoting the elimination of the seeds from the brain. Because Aβ-proteopathy and tauopathy each propagate by a prion-like mechanism of homologous protein corruption, it is likely that, once set in motion, the two pathologic processes advance more or less independently" while the second suggest "a better understanding of the spreading of misfolded proteins", in order to "open new therapeutic opportunities towards blocking protein misfolding and" to promote "protein clearance using antibodies or small molecules". No wonder that infections on people who suffer from amyloidosis may increase the risk for developing neurodegenerative diseases [23].

In other words, in patients with Alzheimer proteins get deposited outside of one`s cells and create amyloidosis; namely, they use little metabolites in their food and build up "fat" of proteins outside their cells. And since all proteins proceed from food, our blood and our organs, particularly the liver, it is mainly the failure of the liver which is the cause of such symptom. It has been shown, in fact, that the liver "is the origin of brain amyloid-β deposits and it is involved in peripheral clearance of circulating it in the blood" and clinical studies using flavonoids (genistein, silymarin) improves such condition [24]. In the third chapter I am discussing more on the importance of the liver in relation to other conditions.

## World Health Organization and medical institutions in complete blindness

The World Health Organization warned in 2014 that cancer is a "global threat". Globally, one in five men and one in six women will develop cancer before the age of 75 and one in eight men, and one in twelve women, will die from the disease. Currently, 14 million people a year are diagnosed with cancer. The rate of cancer will increase to 19 million by 2025, 22 million by 2030 and 24 million by 2035. More than 60% of the world's total cases occur in Africa, Asia and Central and South Africa. Worldwide cases are expected to soar by 70% over the next 20 years. Cancer is the second leading cause of death globally accounting for 8.8 million deaths in 2015. While the ratio of cancer for the general population is expected to increase-global cancer drugs spending will exceed $150 billion by 2020-from $107 billion in 2015. As for the causes, WHO says that cells change their nature as a result of the interaction between a person's genetic factors and 3 categories of external agents, including?

Physical carcinogens, such as ultraviolet and ionizing radiation; chemical carcinogens, such as asbestos, components of tobacco smoke, aflatoxin (a food contaminant), and arsenic (a drinking water contaminant); and biological carcinogens, such as infections from certain viruses, bacteria, or parasites

By adding 'aging' as a fundamental factor as it is combined with the tendency for cellular repair mechanisms which are less effective with the aging. Tobacco and alcohol use, unhealthy diet, and physical inactivity are major cancer risk factors worldwide and are the 4 shared risk factors for other non-communicable diseases [25]. In other words, WHO connects the 'genetic' factors with external agents, ranging from physical carcinogens (ultraviolent and ionizing radiation), chemical carcinogens (asbestos, tobacco, aflatoxin and arsenic) and biological carcinogens (infections from certain viruses, bacteria and parasites?) This is a view adopted since the '70s and has been established in all medical institutions. It originates from the nature of cells, which, when divided, carry on the corresponding genomes in it (Oswald Avery: 1944). From this process researchers have inferred that genes 'control' our cells. And since genes control our cells-they control their health too! But this approach is wrong since genes are part of the cell and not the other way. As such, they control their "end functions" and not their health.

Thus, instead of seeing the cell from a broader perspective, namely, its actual health in relation to the health of one's body and mind, and its role, they related it to genetic factors: because it is the growing of an organism and the health of a cell and the death of another that causes the division of it and it is the health of a cell that secures continuous health. In this sense, cells have a unique role: not only to grow an organism but to secure health to it. Yet, since health is not 'active' and is set into motion mainly through food, the nature of it will be examined hereafter; it is food that sets into motion the health of cells. As Aristotle rightly points out: "the art of healing corresponds to an 'originated source', while the food corresponds to 'the last' (i.e. 'continuous') mover" [26]. The lack of food, therefore, will keep cells unmoved, and if we move with unmoved cells, we destroy some them: because we burn their fuel. The approach of seeing the health of the cell in relation to genes and exterior factors, rather than to its own health and the ways it is being maintained healthy, is clearly wrong.

Rightly, therefore, the approach of physicians who took place in the conference of "The Truth about Cancer" (TTAC: 2017, 2019, 2021): because they see the problem in the cell itself in relation to exterior factors and not in relation to genes. As stated in it: cancer in not a genetic disease as has been accepted by

modern medical schools. Rather, it originates from an immune-deficiency system and a cell with genetic mutation that is caused by a 'change' in the immune system. From the same reason, they concentrate their attention in the immune system. Through this approach they try to empower the immune system in order to stop genetic mutations in cells and by doing so they stop cancer.

Yet, this approach is not sufficient to understand the whole picture of cancer since chronic infections and inflammations can cause changes also in cells and if we do not deal with them, either interiorly or exteriorly or both, they can cause cancer. Infections are being caused by our food and by our toxic environment (when we inhale air etc.). Infections, in turn, can cause inflammations and inflammations, in turn, cancer and chronic diseases. But cancer might start also from inflammation of cells: inflammation, again, is caused either by our food or by our environment or when we move (exercise, walk or work). Inflammation, in turn, can cause infection and infection further problems. See for more on infections and inflammations, chapter III.

In relation to genetic mutations indicative is the fact that some researchers realized a study on mutational signatures or imprints damage on DNA and repair processes that have been operative during tumorigenesis in order to understand them comprehensively by identifying the most previously unreported signatures while establishing the concept of common and rare signatures. It is 'indicative' because they believe that understanding mutational signatures they could fight cancer! Hopefully my research will help them to understand the fact that before studying those "signatures" we must consider the diet of those who partake in the study as it is the main power of genetic mutations. This fact is shown once again in the case of elephants as they have developed "special genes" to fight cancer not because they have developed "tumour suppressors" during their "evolution" from one "species" to another as a study suggest, but mainly because of their diet: for it is plant and grass based.

## From the nature cells to the nature of food: 'motion' causes coming to be and passing way

An immune-deficient system which causes a cell to change its genetic structure or mutation is not always the primary cause of change in the cell since a cell might change either by infections or inflammations, and infections might be caused either by our food or by the wrong food or by our environment or both and a lot of other things. What sets into motion our cells or a change in them, therefore, is not only a deficient immune system but infections and inflammations too: for, they both can cause coming to be and the passing way of our cells. Rightly, therefore, the statement of Aristotle that "motion (not coming-to-be) is the primary form of 'change' coming-to-be and passing-way happen to things continuously and Motion causes coming-to-be. That being so, it is evident that, if the motion be single, both processes cannot occur since they are contrary to one another: for it is a law of nature that the same cause, provided it remain in the same condition, always produces the same effect, so that, from a single motion, either coming-to-be or passing-away will always result. The movements must, on the contrary, be more than one, and they must be contrasted with one another either by the sense of their motion or by its irregularity: for contrary effects demand contraries as their causes. This explains why it is not the primary motion that causes coming-to-be and passing away, but the motion along the inclined circle: for this motion not only possesses the necessary continuity, but includes a duality of movements as well. For if coming-to-be and passing away are always to be continuous, there must be somebody always being moved (in order that these changes may not fail) and moved with a duality of movements (in order that both changes, not one only, may result). Now the continuity of this movement is caused by the motion of the whole: but the approaching and retreating of the moving body are caused by the inclination. For the consequence of the inclination is that the body becomes alternately remote and near; and since its distance is thus unequal, its movement will be irregular. Therefore, if it generates by approaching and by its proximity, it-this very same body-destroys by retreating and becoming remote: and if it generates by many successive approaches, it also destroys by many successive retirements. For contrary effects demand contraries as their causes; and the natural processes of passing-away and coming-to-be occupy equal periods of time.

Hence, too, the times i.e. the lives of the several kinds of living things have a number by which they are distinguished: for there is an order controlling all things, and every time (i.e. every life) is measured by a period. Not all of them, however, are measured by the same period, but some by a smaller and others by a greater one: for to some of them the period, which is their measure, is a year, while to some it is longer and to others shorter [27].

Although Aristotle`s statement might be better used for the nature of the atom rather than of the cell, still, the relationship between a cell with genetic mutation and the 'change' in the immune system or conversely, the 'change' in the immune system which causes a genetic mutation in the cell, is crucial in understanding cancer. Even if we see the cell from an atomic point of view, which in its centre has a nucleus composed by protons and neutrons and around it the electrons the diverse composition of them creates a variety of physical elements with other characteristics and functions and in order to balance itself it has to have an equal amount of energy, matter and gravity and it has a dual character, that is, it interacts with other atoms in the universe of atoms, by causing changes, both to itself and to others, and the cell has the same nucleus in an enclosed membrane with organelles, in which mitochondria infuses the cell with energy by synthesizing proteins and other elements and such proteins and elements are the result of food, water and oxygen, and it has a dual character, that is, an interior world separate from the outside world but at same time part of it, we may easy see the causes of any 'change' in the cell: for if there is not food in the stomach of an animal there is not energy for the cell and if there is no energy-there is no balance in the body.

Cells, in fact, start to spend their own energy by reducing the number of mitochondria. The only difference between an atom and a cell is that the former makes up the latter and not the other way while the character of them is the same: dual-they

interact as separate bodies- with the universe and its motions. But while the state of one's mind cannot affect body's atoms-it can affect its cells. This is why cells are prone to the state of mind too. The state of our mind and of our cells, therefore, is a precondition for a healthy body. But the state of our cells is most important than the state of our mind, at least in our youth, since they are the primary cause of health-in the sense that our body is prior in the order of generation than mind, soul and virtuous activities.

That was all about the conference: not only to show us that the problem must be seen in the light of a healthy cell within a healthy body but how to cure and prevent cancer. In this sense, cancer is a symptom of an immune-deficient body. No wonder that melanoma, a skin cancer which has been considered 'untreatable' for decades, now is 'treatable'-as more than half of patients can survive it according to some researchers who changed their approach and used drugs (nivolumab ipilimumab), with serious side effects, which are designed to enhance the immune system (allow white cells to attack cancer cells by interrupting the chemical signals cancer cells use for each other), for 945 patients with stage four cancer and saw notable results: their five-year survival rate improved (26% for those who used imilimumab alone; 44% for those who used nivolumab alone; and 52% were alive after using both) [28].

Another drug, used by University of California in Los Angeles, Keytruda, a type of immunotherapy that removes brakes in the immune system to unleash the body as a weapon against cancer, or as has been called, a checkpoint inhibitor, has been "successful" for lung cancer, bones and organs alike - unlike chemotherapy, for some patients. But not for others! [29].

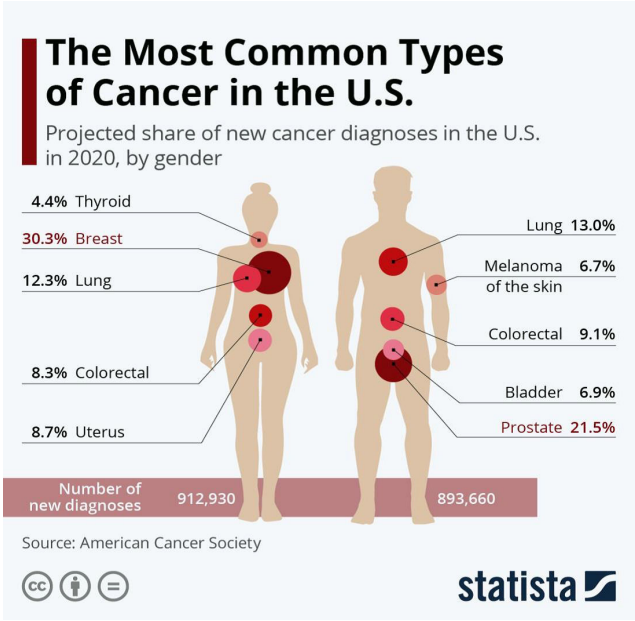


**Figure 1:** The most common types of cancer.

Cancer, therefore, must be seen in our cells-in relation, first of all, to our food, and second, to exterior factors: in relation to 'our food', because an efficient-immune system is supposed to have the power to resist any exterior factor. The interdependence between our food, an efficient immune system and healthy cells is therefore sine qua non for a healthy being (Figure 1). Hence the proposition of Hippocrates, the father of the early medicine: "let food be thy medicine and medicine be thy food". Aristotle gives us a better account when he examines the nature of food and refutes the orthodox views of his time, one being the one ('Darwinian') adopted in modern times-that is, "each is food to the other"-and includes food in his treaty "On the soul", because food is related to what has soul and power:

Nutrition and reproduction are due to one and the same psychic power food is essentially related to what has soul in it. Food has a power which is other than the power to increase the bulk of what is fed by it; so far forth as what has soul in it is a quantum, food may increase its quantity, but it is only so far as what has soul in it is a 'this-somewhat' or substance that food acts as food; in that case it maintains the being of what is fed, and that continues to be what it is so long as the process of nutrition continues. Further, it is the agent in generation, i.e. not the generation of the individual fed but the reproduction of another like it; the substance of the individual fed is already in existence; the existence of no substance is a self-generation but only a self-maintenance. Hence the psychic power which we are now studying may be described as that which tends to maintain whatever has this power in it of continuing such as it was, and food helps it to do its work. That is why, if deprived of food, it must cease to be [30].

Yet, the nature of the food must be understood in relation to the nature of the cells in order to secure healthy cells for a healthy body: they must be compatible. But this is not enough since the health of the body depends on the health of the mind. Even the 'discovery' of Otto Warburg, that the prime cause of cancer is the lack of oxygen in normal body cells, must be seen in a broader context in the body, since oxygen is one part of a empowered body by food, exercise and the state of mind and not the other way. It would not be a surprise then the conclusion reached by some researchers that "food may influence cancer spread" [31].

## Results and Discussion

Modern medical schools have accepted the general belief that cancer is a genetic disease, a belief which passivized medical research for many years if not decades. Hence the nature of belief: it might help us in the search of truth when we base our belief on proofs but it might also stop us. But in recent years it has been developed another belief: that cancer is caused by an immune-deficiency system and a cell with genetic mutation, which, in turn, has been caused by a 'change' in the immune system. But they do not explain thoroughly the nature of the immune system except the fact that the immune system is related largely with the digestive system and as a result they suggest using that 'system' in order to empower it and fight cancer. But even in this case they do not explain thoroughly how to empower it. Currently there are being used some "treatments" against cancer; some are being categorized as "localized therapies"-surgery; radiation therapy; chemotherapy; cryotherapy and heat; and chemical ablation; and others as "systemic therapies"- e.g., chemotherapy; hormonal therapy; immune therapy and targeted therapy-used alone or in

combination [32]. Beside these, there are being developed some new practices I examined beforehand (e.g., treatment on mutated genes; natural killer cells and antibody therapies). All of them "fight" symptoms and not the real causes of cancer. Hence their aim: to "cure" rather than heal. And hence the short rate survival: relatively five years for most cancer types. Even those who have as a starting point the immune system, use a small part of it. For example, "gene therapies" or the "genetic tinkering of the DNA", which supposedly reboots the immune system, uses only the DNA, which is by far a very small part of the immune system. In fact, it just uses the existing power of cells by changing the power of genes. From those practices, chemotherapy is worst since it kills cancer and good cells while cancer cells evade therapy and they proliferate once it has been paused. Its mechanisms (how persisted cells resist to chemotherapy) have been studied and understood [33].

## Conclusion

The replacement of the faulty DNA of the mitochondria in closed systems, such as the eye, might be used, but it does not solve the problem since an active organism might fight them much better. The "therapy" which works on "mutated genes" does not proceed from the causes of mutations while those who work on "natural killers" might improve their effort once they understand how to activate them through the power of food. Those, finally, who use "antibodies", might improve their effort once they understand that proteins are a source of power and might empower our cells but they can kill also our cells and tissues once our cells are being imbalanced and our liver does not work as it should! The general principle we may generate from this study is the fact that mutations in the DNA of a cell occur mainly due to an imbalance of the primary cell in purine and pyrimidine bases. Having this principle in mind we may 'prevent' DNA mutations by providing our body with the mentioned substances. But this is not enough since the power of a cell is determined by many substances and cancer is not caused only from DNA mutations. For the same reason I am going to explore next the nature of mind, consciousness, soul and nutritionism, as they are interrelated and affect the state of a biological system such as our body, and next to it I am going to show more on cancer and nutritionism.

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