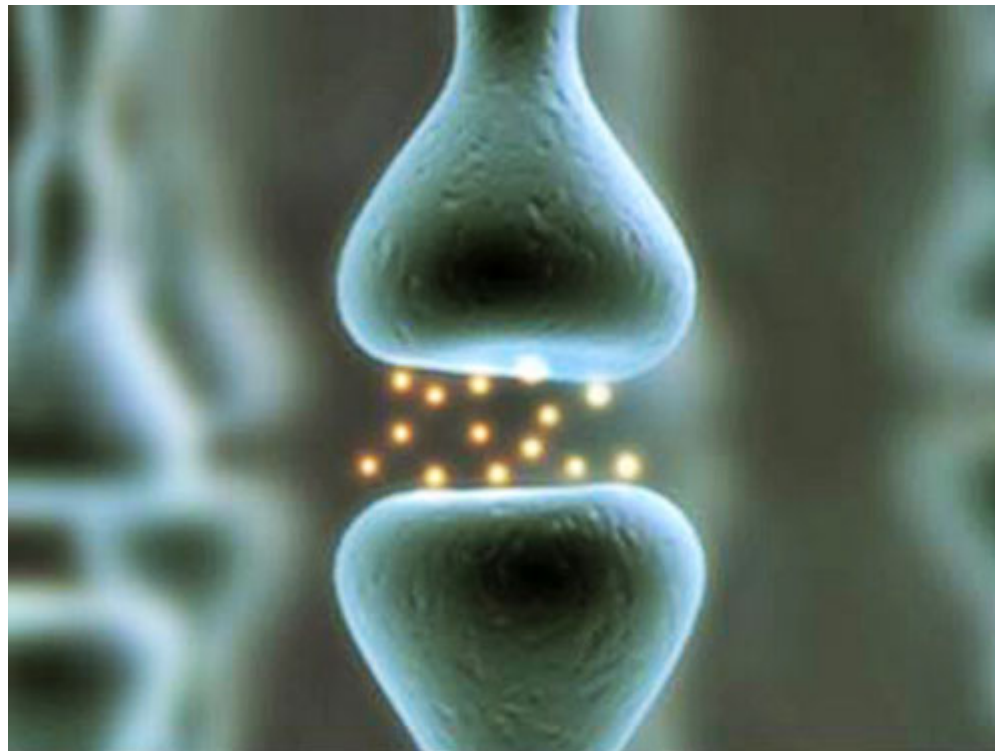


Treating Cancer with Electrons

by **Mark Sircus**
December 14, 2016
from [DrSircus](#) Website



**If lack of oxygen is a
key driver of cancer growth
then so is low CO², pH and
depressed cell voltage.**

Cancer cells possess different electrical and chemical properties than normal cells.

In cancerous tissue the electrical potential of cell membranes is maintained at a lower level than that of healthy cells. Dr. **Jerry Tennant** says that at +30 millivolts we get cancer, a level of voltage where the polarity has shifted from negative to positive.

Dr. **Merrill Garnett** reports that all cancer cells have abnormal electron transfer systems and that normal cell development involves normal energy flows.

Dr. **Steve Haltiwanger** says,

"What is known is that in cancer changes in cell membrane structure, changes in membrane function, changes in cell concentrations of minerals, changes in cell membrane potential, changes in the electrical connections within the cells and between cells, and changes in cellular energy production all occur."

Heavy metals and chemical toxins are capable of causing cancerous transformations because they affect the structure and function of the cell membrane and the [mitochondria](#) - disrupting the electrical potential of cell membranes and the structure of mitochondrial membranes, which ends up deactivating the electron transport chain and disturbing oxygen-dependent energy production.

Cells will then revert to fermentation, which is a less efficient primeval form of energy production.

The German cancer researcher Dr. **Paul Gerhard Seeger** found that cancer cells utilize only between 5 and 50% of the oxygen of normal cells. The virulence of cancer cells is directly proportional to their loss of oxygen utilization, and with this to the degree of blockage of the respiratory chain.

In 1957 Seeger successfully transformed normal cells into cancer cells within a few days by introducing chemicals that blocked the respiratory chain.

Seeger demonstrated in 1938 that in most cases cancer starts in the [cytoplasm](#), the jelly-like outer part of the cell, and especially in the energy-producing mitochondria. Here food fragments are normally oxidized in a series of enzymatic steps called the 'respiratory chain'.

Seeger showed that in cancer cells this respiratory chain was more or less blocked, especially at the site of the important enzyme cytochrome oxidase. Without it the cell can [produce energy only anaerobically like a fungal cell](#).

This is very inefficient and the resulting overproduction of lactic acid makes the cell and the whole body overly acidic.

Cancer tumors not only have a low voltage but they go beyond that into a range that it is so low that they are stealing electrons from the surrounding tissues thus lowering their voltage-pulling them down into cancer as well.

A plus sign in front of the voltage number means that they have crossed a threshold, they have reversed polarity and have thus become the enemies of the healthy cells of the body. When our voltage goes down too far (even when still on the healthy negative side) we start to experience pain and sickness.

A reading of -15, -10, or even -5 can be experienced (as increasing pain) but it is not until they go down below zero and beyond to a +30, that cancer occurs.

A plus sign means they are stealing, hungry for electrons whereas a negative sign (normal) means cells have energy and electrons to give. The negative sign of the membrane potential indicates that the inside surface of the cell membrane is relatively more negative than the than the immediate exterior surface of the cell membrane. ⁽¹⁾

According to Seeger cancer cells become more electronegative as their membrane degenerate.

In the initial phase of [carcinogenesis](#), the external cell membrane weakens and then the inner mitochondrial membrane, which alters the energy producing capacity forcing the cell into fermentation as an alternative source of energy.

The degenerative changes in the inner membrane of the mitochondria causes loss of anchorage of critical mitochondrial enzymes. The mitochondria in cancer cells degenerate and die off in large numbers.

When we add voltage to cells we improve cell membrane potentials and increase mitochondrial production of [ATP](#), cell membrane permeability, production of proteins and as well as increase absorption of nutrients and elimination of cellular wastes.

pH, Voltage and Oxygen

Voltage circuits run through the nervous system and heart.

Body fluids, vessels, fascia and other connective tissues conduct electrical energy. When we have enough voltage, enough energy our body transports oxygen efficiently. All cells need a steady supply of oxygen to power their mitochondria, where more electrons are generated.

We can raise voltage in the body by directly imputing electrons to facilitate oxygen delivery, which of course raises energy levels and the health of all cells.

[Research scientists](#) from the Cancer Research UK-MRC Gray Institute for Radiation Oncology & Biology at the University of Oxford have discovered that oxygen makes cancer cells weak and less resistant to treatment.

Previously scientists have tried to cut off the blood (thus oxygen) thought to be fueling tumor growth.

The idea has been to *starve and kill the tumor*. When we use oxygen as a treatment it actually improves the blood vessels within the tumors thus increasing the concentration of oxygen present.

The external pH of solid tumors is acidic as a consequence of increased metabolism of glucose and poor perfusion. [Acid pH has been shown to stimulate tumor cell invasion and metastasis](#) in vitro and in cells in vivo. ⁽²⁾

That is the same as saying low voltage stimulates tumor cell invasion and metastasis.

Sodium Bicarbonate, which increases tumor pH, inhibits spontaneous metastases. Basic scientific research confirms the [benefits of using sodium bicarbonate](#) in cancer treatment.

Dr. [Julian Whitaker and Mark McCarty](#) write,

"The degree to which pH is depressed in tumors - as mirrored by their lactate levels - tends to correlate with prognosis, the more acidic tumors being associated with poorer outcome.

In part, this phenomenon may reflect the fact that tumor acidity is serving as a marker for [HIF-1](#) activation, which works in a variety of complementary ways to boost tumor capacity for invasion, metastasis, angiogenesis, and chemo-resistance.

However, there is increasing evidence that extracellular acidity *per se* contributes to the aggressiveness of cancer cells, boosting extracellular proteolytic activities, expression of pro-angiogenic factors, and metastatic capacity."

Genes directly experience external [pH](#).

Cancer cells have a lower voltage and a lower pH than surrounding tissues. Our body's pH and voltage will control the activity of every metabolic function happening in our body.

pH is behind the body's electrical system and intracellular activity as well as the way our bodies utilize enzymes, minerals, and vitamins.

History of Voltage in Oncology

On the [Medical Physics website](#), we read the history of voltage in oncology.

The link between voltage and cancer goes back to the late 1930s, when Dr. **Harold Saxton Burr** used a new-fangled device called a voltmeter to show that tumor tissue has different electrical properties from normal tissue.

In the early 1970s Dr. **Clarence Cone**, a biophysicist at NASA's Langley Research Center in Virginia, traced this difference to a disparity in cell polarization, or how much more negatively charged the inside of a cell is compared with its outside.

Tumor cells, Cone found, are less polarized than normal cells, and he suggested that electric polarization might somehow be a regulator of cancer and other cell proliferation.



Tumorous cells (highlighted in red) have consistently lower voltages than healthy cells.

Dr. [Michael Levin](#) at Tufts University in Medford, MA, and doctoral student [Brook Chernet](#) have in recent years found persuasive evidence that Cone was right.

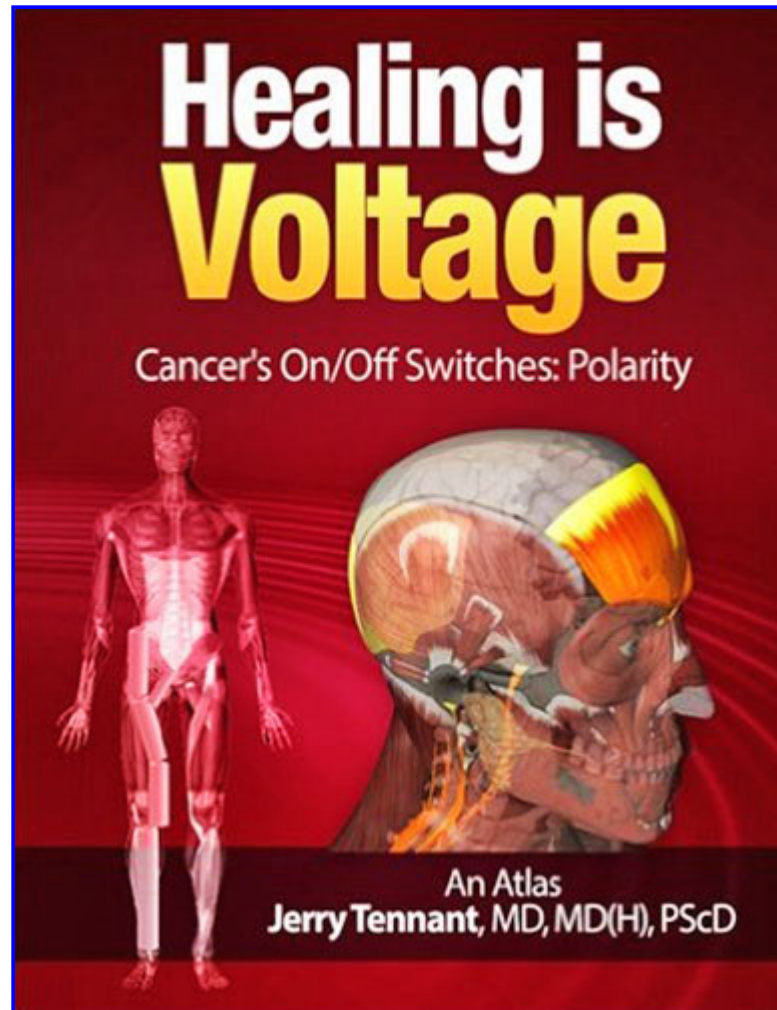
In their experiment, they injected messenger RNA that encodes human oncogenes - genes that can transform normal cells into tumor cells - into tadpoles. Next, they soaked the frog larvae in fluorescent dye.

This dye was voltage-sensitive, fluorescing more brightly when the cell polarization was greater.

Levin and Chernet did not know which tadpoles would develop tumors. However, as soon as a tadpole exhibited a dark patch of low fluorescence, indicating lowered cell polarization, the researchers segregated it from the others to monitor it.

They found that, over several days, such patches of lowered polarization nearly always developed into tumors, confirming the link between cell polarization and cancer.

Stop Cancer by Increasing Polarization of the Cells



Dr. **Jerry Tennant** says,

"We do not treat cancer. We do support patients with cancer to help get their nutrition, minerals, acid-base balance, etc. in as good a condition as possible."

He also says,

"The reversal of polarity occurs in a battery in a circuit and the accompanying loss of oxygen with low voltage tells local stem cells to make a placenta (cancer) to attempt to correct the low voltage and oxygen via fermentation since there is inadequate oxygen to keep that organ functional."

The on switch for cancer is an accumulation of electron stealers in an acupuncture circuit; the off switch for cancer is removing the causes of low voltage and inserting enough electrons to reverse the polarity back to normal."

According to researchers at Tufts University, the two phenomena - lowered polarization and tumor development - are connected by a straightforward chain of events.

Cells become polarized when there is an imbalance of the positive and negative ions that flow in and out of cells through channels in cell membranes. Polarization itself regulates the operation of so-called transporter proteins, which pump signaling molecules through the channels.

Through their experiments, Levin and Chernet have found that a lowered polarization inhibits the function of a transporter protein that draws in the signaling molecule [butyrate](#), which, through various enzymes, controls the expression of growth genes.

With less butyrate in the cell, these genes are free to instigate abnormally high, cancerous growth.

Levin is encouraging scientists to consider the possibility that tumor cells are not irrevocably damaged, at least not all of them, and other researchers have suggested the same.

Dr. [Johanna Budwig](#)'s emphasis on ingesting quality lipids gives cell membranes the potential to heal and increase their voltage.

Conclusion

Surviving cancer is never going to be completely easy but is possible as long as one does all the right things.

The right things brought together into a [meaningful protocol](#) will yield the results we might expect from anything that declares itself to be a cure. It is foolish to declare any one substance or approach a cure when we can combine many powerful things starting with treating cancer with electrons - with pure energy.

The obvious way to stop cancer growth is to increase the polarization of the cells by adding voltage, alkalinity and oxygen.

The point is that we are talking in the most basic language of biological existence - of an axis of agents:

- cell voltage (electrons as medicine)
- pH (any agent that is alkalizing as medicine)
- oxygen as medicine (which is needed for efficient metabolism)
- [carbon dioxide as medicine](#),

...because it is an important key to raising pH, cell voltage and oxygen levels.

- Wherever the body suffers from low oxygen conditions, we have disease and eventually cancer.
- Wherever the body becomes acidic, voltage drops as does tissue oxygen levels.

What is pH after all? It is ultimately a measure of [redox potential](#).

Redox potential is a measure of whether electrons are available in surplus (and thus are "electron donors") or whether electrons are deficient (and thus are "electron stealers").

Electrons are necessary for life and are needed for health and in high quantities for healing and the growth of new cells.

Cancer can be kept ***under control*** and even ***reversed*** by adding voltage, alkalinity and oxygen to healthy cells around tumors, which will help prevent healthy cells from deteriorating into cancer.

The immune system would benefit directly from voltage administration and this is bad news for cancer...

References

1. Cure, 1991
2. [Bicarbonate Increases Tumor pH and Inhibits Spontaneous Metastases](#) - Ian F. Robey,1; Cancer Res 2009; 69: (6) - March 15, 2009

Treating Cancer with... Voltage, Alkalinity and Oxygen

by Mark Sircus
December 16, 2016
from [DrSircus](#) Website



Treating cancer with the triad of voltage, alkalinity and oxygen is an interesting new approach because it treats the fundamental reasons cancer cells form and get aggressive.

What is most interesting is that voltage, alkalinity and oxygen levels track each other. They all increase or decrease together yet we can use treatment approaches that focus on each of the triads arms.

[Electrons can be used to increase voltage directly.](#) Sodium and potassium bicarbonates can increase alkalinity chemically. And oxygen can be provided in several ways and importantly with [slow breathing](#).

The most important factor in creating proper pH is increasing oxygen because no wastes or toxins can leave the body without first combining with oxygen. The more alkaline you are, the more oxygen your fluids can hold and keep.

Oxygen also buffers/oxidizes metabolic waste acids helping to keep you more alkaline.

The quickest way to increase oxygen and pH is through the administration of sodium bicarbonate and that is why bicarbonate has always been a mainstay [emergency room and intensive care medicine](#).

Of course, when we increase oxygen and pH levels we are simultaneously increasing cellular voltage.

"The Secret of Life is both to feed and nourish the cells and let them flush their waste and toxins", according to Dr. Alexis Carrell, Nobel Prize recipient in 1912.

Dr. **Otto Warburg**, also a Nobel Prize recipient, in 1931 and 1944, said,

"If our internal environment was changed from an acidic oxygen deprived environment to an alkaline environment full of oxygen, viruses, bacteria and fungus cannot live."

Oxygen Disassociation Curve

The position of the *oxygen disassociation curve* (ODC) is influenced directly by pH, core body temperature and carbon dioxide pressure.

According to Warburg, it is the increased amounts of carcinogens, toxicity and pollution that cause cells to be unable to uptake oxygen efficiently. This is connected with over-acidity, which itself is created principally under low oxygen conditions.

On [Wikipedia](#) we read,

"The strength with which oxygen binds to hemoglobin is affected by several factors. These factors shift or reshape the oxyhemoglobin dissociation curve.

A rightward shift indicates that the hemoglobin under study has a decreased affinity for oxygen.

This makes it more difficult for hemoglobin to bind to oxygen (requiring a higher partial pressure of oxygen to achieve the same oxygen saturation), but it makes it easier for the hemoglobin to release oxygen bound to it.

The effect of this rightward shift of the curve increases the partial pressure of oxygen in the tissues when it is most needed, such as during exercise, or hemorrhagic shock.

In contrast, the curve is shifted to the left by the opposite of these conditions.

This leftward shift indicates that the hemoglobin under study has an increased affinity for oxygen so that hemoglobin binds oxygen more easily, but unloads it more reluctantly.

Left shift of the curve is a sign of hemoglobin's increased affinity for oxygen (e.g. at the lungs).

Similarly, right shift shows decreased affinity, as would appear with an increase in either body temperature, hydrogen ions, [2,3-bisphosphoglycerate](#) (formerly named diphosphoglycerate, which is now considered incorrect) or carbon dioxide concentration."

Control factors	Decrease	Increase
Temperature	left shift	right shift
2,3-BPG	left shift	right shift
p(CO ²)	left shift	right shift
pH (Bohr effect)	right shift (acidosis)	left shift (alkalosis)

According to **Annelie Pompe**, a prominent mountaineer and world-champion free diver, alkaline tissues can hold up to 20 times more oxygen than acidic ones.

When our body cells and tissues are acidic (below pH of 6.5-7.0), they lose their ability to exchange oxygen. Increases of carbon dioxide, bicarbonates and electrons lead to increased oxygen.

Tumor cell differentiation, tumor hypoxia and low cellular pH and voltage affects gene expression, genetic stability, genetic repair, protein structures, protein activity, intracellular mineral concentrations, and types of metabolic pathways used for energy production.

There is no shortage of research showing the link between pH and cancer, which translates clearly into there is plenty of research showing a link between cancer and low voltage since voltage and pH are measurements of the same thing.

Cancer thrives in an acidic low voltage [low oxygen environment](#), and doesn't survive in a normal, more alkaline (high voltage) environment.

Cancer cells make your body more acidic as they produce lactic acid.

Tumor Hypoxia

The severity of hypoxia and acidosis in tumors can affect tumor cell invasiveness, metastasis as well as the risk of recurrence.

UT Southwestern scientists led by Dr. [Ralph Mason](#) reported in the online issue of *Magnetic Resonance in Medicine* that countering hypoxic and aggressive tumors with an "oxygen challenge" - inhaling oxygen while monitoring tumor response - coincides with a greater delay in tumor growth in an irradiated animal model. ⁽¹⁾

Scientists at the University of Colorado Cancer Center said,

"It seems as if a tumor deprived of oxygen would shrink.

However, numerous studies have shown that tumor hypoxia, in which portions of the tumor have significantly low oxygen concentrations, is in fact linked with more aggressive tumor behavior and poorer prognosis.

It's as if rather than succumbing to gently hypoxic conditions, the [lack of oxygen commonly created as a tumor outgrows its blood supply signals a tumor to grow and metastasize in search of new oxygen sources](#) - for example, hypoxic bladder cancers are likely to metastasize to the lungs, which is frequently deadly." ⁽²⁾

A team of researchers lead by Dr. **Bradly Wouters**, at the University of Toronto, Canada assert that tumors with large areas with low levels of oxygen (areas known as hypoxic regions) are associated with [poor prognosis and treatment response](#). ⁽³⁾

Not all the regions of a tumor are equal in terms of their oxygen levels. One clinically important implication of this is that tumors with large areas with low levels of oxygen (areas known as hypoxic regions) are associated with poor prognosis and treatment response.

Dr. **Paolo Michieli** and colleagues, at the University of Turin Medical School, Italy found that [tumors rely on hypoxia](#) to promote their own expansion. Hypoxia is a key factor driving tumor progression.

This is a hallmark of malignant tumors and has been suggested to promote tumor progression. (4)

Combination Treatment Approach to Treating Cancer

[Combined with other treatment approaches](#) regulating cell voltage is another way of treating cancer.

Researchers in the US have already found out that simply regulating the voltage of tumorous cells could be enough to stop them spreading out of control but when combined with,

- oxygen ([hyperbaric chambers](#) or [Live O²](#))
- [sodium bicarbonate](#)
- [remineralization](#)
- [super nutrition](#),

...we have a cancer approach that is worth consideration.

Using voltage testing and voltage for treatment is a relatively new way of dealing with cancer.

"There's been a little bit of disbelief, because it's a whole different ball game," says Dr. [Mustafa Djamgoz](#), a cancer biologist at Imperial College in London.

"It has opened up a whole new set of opportunities."

Oncologists know that having a strong immune system is important in fighting cancer.

"The immune system needs voltage, iodine and ozone to kill bugs. Tumors cannot grow if the oxygen levels are normal, and oxygen levels are controlled by voltage," says Dr. [Jerry Tennant](#).

He could have said oxygen levels are controlled by pH or oxygen levels control voltage because if there is too little oxygen then the mitochondria cannot create enough ATP to keep cellular energy high.

Do Not Forget the Body Temperature

It is important to notice in the above chart about the oxygen disassociation curve that temperature is important.

[Adding heat into the body](#) of anyone via the [heavy use of infrared sleeping mats](#) will also help to increase immune system strength, while giving the patient a great measure [of comfort for pain](#).

Electromagnetic Fields, Voltage, Cellular Communication, Oxygen Deprivation

Dr. **Aleksandr Samuilovich Presman** in his 1970 book [Electromagnetic Fields and Life](#) identified several significant effects of the interaction of electromagnetic fields with living organisms.

Electromagnetic fields:

1. have information and communication roles in that they are employed by living organisms as information conveyors from the environment to the organism, within the organism and among organisms
2. are involved in life's vital processes in that they facilitate pattern formation, organization and growth control within the organism

Dr. Haltiwanger says,

"Normal cells possess the ability to communicate information inside themselves and between other cells.

The coordination of information by the cells of the body is involved in the regulation and integration of cellular functions and cell growth. It takes energy to communicate it takes voltage. When cancer arises cancer cells are no longer regulated by the normal control mechanisms.

Communication breaks down because there is not enough voltage for anything but destruction."

All biological process and in particular the metabolism of every single cell are based on their voltage and electromagnetic frequency.

Only an organism which is sufficiently supplied with energy is able to control the self-regulating mechanisms and has the powers of regeneration and healing.

"The ideal task of cancer therapy is to restore the function of the oxidizing systems," wrote Dr. Max Gerson in his book, [A Cancer Therapy: Results of Fifty Cases and the Cure of Advanced Cancer](#).

"Deprive a cell of 35% of its oxygen for 48 hours and it may become cancerous," said Dr. Otto Warburg.

Deprived of air we die, but our cells have a bastardly trick up their sleeves where they can survive low-oxygen conditions.

We call this condition cancer, the slow starvation of healthy cells while cancer cells thrive.

Cancer Environment

Cancer involves an interaction between rogue cells and surrounding tissue. This is the clear message of Dr. [Mina Bissell](#).

Cancer cells routinely form in most people's bodies in areas of low voltage, low oxygen and acidic pH. What this means is that the health or sickness of surrounding cells and the surrounding extracellular matrix interact to shape cancer cell behaviors such as polarity, migration and proliferation.

In the *New York Times*, we see Dr. **Susan Love**, a breast cancer surgeon saying,

"What it means, if all this environmental stuff is right, is that we should be able to reverse cancer without having to kill cells. This could open up a whole new way of thinking about cancer that would be much less assaultive."

Cancer geneticist Dr. [Bert Vogelstein](#), director of the Ludwig Center for Cancer [Genetics](#) and Therapeutics at John Hopkins said,

"One cannot fully understand that disease unless one understands the tumor's environment."

Though not the only way, micro-current is the easiest and most direct way of altering local environments that surround cancer tumors.

Electrocution of Cancer Cells

Some medical scientists discovered that zapping cells with extremely brief, high-voltage electric pulses that they could trigger the self-destruct mechanism in the cells' biochemical machinery.

In the 1950's, a Swedish radiologist and surgeon, Dr. **Björn Nordenström** demonstrated that when micro-current was passed through [needles implanted into cancerous tumors](#) it blocked cancer pain and in many cases caused the tumors to regress or disappear.

He theorized that this treatment set up a form of electro-osmosis that dehydrated the tumor and blocked production of pain-producing substances such as histamine.

Dr. Haltiwanger said that Nordenström's technique was to place the positive electrode into the tumor and the negative electrode outside of the tumor.

"This resulted in an increased flow of electrons into the tumor, a change in the electrical field around a tumor and activation of membrane receptors and ion channels.

If tumor cells are in fact electron deficient this increased flow of electrons, membrane receptor effects and movement of ions through ion channels will have definite effects on cellular metabolic processes."

Drs. [Karl H. Schoenbach](#) and [Stephen Beebe](#) reported inducing apoptosis in cancer cells with electric pulses in 2001.

Using needle electrodes, they zapped tumors with a series of electric pulses 300 nanoseconds long and 60 kilovolts per centimeter in magnitude. They found that treated tumors grew only 50 to 60 percent as big as the untreated tumor, with many cells dying by apoptosis.

Delivering such high voltage in just a few billionths of a second is akin to accelerating a car from 0 to 100 kilometers per hour and then decelerating it back to 0, all within 1 second.

This is not what we are recommending.

PEMF Therapy

Low-level electromagnetic fields are known and [used to halt cancer cell growth](#). Voltage is synonymous with electromagnetic fields. (5)

Pulsed electromagnetic field therapy (PEMFT) is FDA approved to promote the healing of non-healing bone unions and has been used in Europe for over 20 years with individuals with,

- [cancer](#)
- migraines
- sports related injuries
- wound healing,

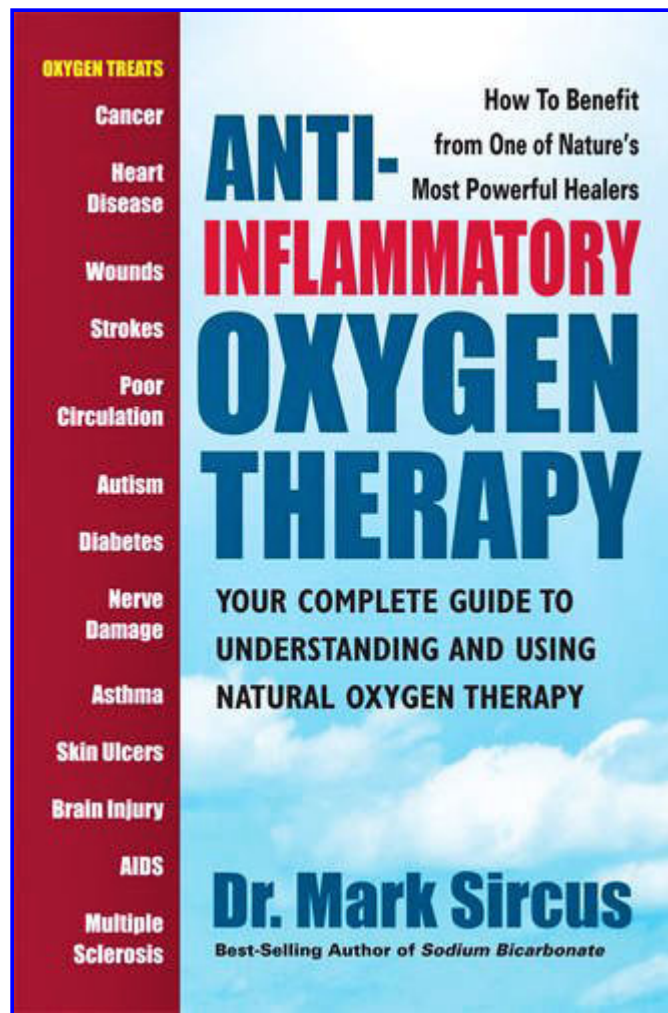
...and other pain syndromes.

In layman's terms:

low-frequency pulses create a brief, intense voltage around each cell. The mitochondria within the cell grab some of this energy. This, in turn, makes the cell more efficient at producing ATP and delivering oxygen throughout the body.

Using micro-current is a more direct way of bathing cells with voltage boosting ATP production even higher than PEMFT techniques though the two can and should be used together.

Conclusion



The spread or metastases of cancer is inversely proportional to the amount of oxygen and the acidity around the cancer cells.

The more oxygen, the slower the cancer spreads. The less oxygen and the higher the acidity the faster the cancer spreads. If cancer cells get enough oxygen, they will die (cancer cells are anaerobic).

If you deprive a group of cells of vital oxygen (their primary source of energy), some will die, but others will manage to alter their genetic software program and mutate and be able to live without oxygen.

When the oxygen level drops below 60%, the respiration process of making energy changes into fermentation in a cancer cell. Normal cells turn cancerous. Normal body cells need oxygen and are aerobic whereas cancer cells do not need oxygen and are anaerobic.

Healthy cells metabolize, burn oxygen and glucose to produce ATP.

Bottom line, [orthodox cancer treatments DO NOT treat cancer](#) for they not only do not address oxygen, pH and voltage levels, they make the situation worse by lowering oxygen levels further, turn the body more acid and thus health and voltage levels suffer.

What else should one expect from toxic chemicals found in chemotherapy and highly toxic nuclear radiation that is also used in orthodox cancer treatments and tests.

Sometimes these dangerous treatments do kill cancer before it kills the host.

No matter what anyone says cancer survival statistics still imply that present orthodox cancer treatments are not doing the job they should be doing, which is to from the first moment of diagnosis, to raise body oxygen levels along with pH levels as well as increase overall body voltage through a host of means.

It is important to note that magnesium also increases oxygen delivery to the cells because [magnesium is crucial for red blood cells to retain shape](#) - thus their ability to carry oxygen.

Magnesium is one of the [most overlooked anticancer agents](#).

References

1. UT Southwestern Medical Center. "[Oxygen - key to most life - decelerates many cancer tumors when combined with radiation therapy.](#)" ScienceDaily. ScienceDaily, 23 July 2013.
2. S. Thomas, M. Harding, S. C. Smith, J. B. Overvest, M. D. Nitz, H. F. Frierson, S. A. Tomlins, G. Kristiansen, D. Theodorescu - CD24 is an effector of HIF-1 driven primary tumor growth and metastasis - *Cancer Research*, 2012; DOI:[10.1158/0008-5472.CAN-11-3666](#); <http://www.sciencedaily.com/releases/2012/09/120913123516.htm>
3. Kasper M.a. Rouschop, Twan Van Den Beucken, Ludwig Dubois, Hanneke Niessen, Johan Bussink, Kim Savelkouls, Tom Keulers, Hilda Mujcic, Willy Landuyt, Jan Willem Voncken, Philippe Lambin, Albert J. Van Der Kogel, Marianne Koritzinsky, and Bradly G. Wouters - The unfolded protein response protects human tumor cells during hypoxia through regulation of the autophagy genes MAP1LC3B and ATG5 - *Journal of Clinical Investigation*, 2009; DOI: [10.1172/JCI40027](#)
4. Maria Galluzzo, Selma Pennacchietti, Stefania Rosano, Paolo M. Comoglio and Paolo Michieli - Prevention of hypoxia by myoglobin expression in human tumor cells promotes differentiation and inhibits metastasis - *Journal of Clinical Investigation*, 2009; DOI: [10.1172/JCI36579](#)
5. *Comp Med.* Aug 2011; 61(4): 339–345 - Effect of Magnetic Fields on Tumor Growth and Viability

[Return to The Defeat of Cancer](#)