

2008

Electric Autoimmunity

Etiology and basis for nontoxic intervention in autoimmune diseases

A novel view of cause and cofactors in autoimmune dysregulation in Rheumatoid Arthritis, Multiple Sclerosis, Ankylosing Spondylitis, Lupus and other autoimmune syndromes. This article presents an integrated view of cellular energetic factors participate autoimmune targeting with B-Cell lines through Tumor Necrosis Factor targeting common to autoimmune disease.



Contents

Foreword.....	3
The Cell Membrane.....	4
The Basis of Power.....	4
pH Culture.....	5
Autoimmune Dysregulation.....	7
Electrically Mediated TNF Cancer Response.....	7
TNF and Autoimmune Dysfunction.....	7
PEMF Cellular Effect Model.....	8
In-Vivo Pasteurization.....	8
Obvious versus Stealth.....	9
Ringing and Pathogens.....	10
Pulsed Magnetic Fields and Biology.....	11
Electromagnetic Sensitivity Explained.....	11
Autoimmune Cofactors.....	11
The Potassium Mystery.....	12
The Secret Potassium Source.....	12
Potassium Anabolism.....	12
Potassium and Autoimmune Symptoms.....	13
Lupus Footnote.....	13
Therapeutic Response Model.....	14
Autoimmune Syndromes.....	15
Rheumatoid Arthritis / Ankylosing Spondylitis:.....	15
Multiple Sclerosis.....	15
Lupus Erythematosus.....	15
Autoimmune Cofactor Candidates.....	16
For Protocol Information.....	16

Foreword

Cells are electrical devices.

This article presents an electrically oriented view of the cell, with particular focus on the cell membrane.

Autoimmunity, as conducted by lymphocytes, B-Cells, T-Cells, and Natural Killer cells, generally involves interactions of these cells with physical contact to evaluate the health of other cells.

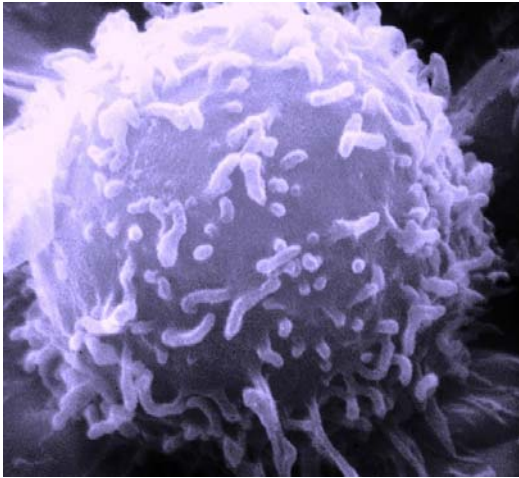


Figure 1 - An immune cell

Autoimmunity is the army of cells which patrol, evaluate, and eliminate “foreign” and “disruptive” elements, in the continuing process of life and health.

The traditional view that these cellular interactions are chemical, and not electrical, is strikingly limited.

This article suggests novel view that most auto-immune disorders reflect a combination auto-electrical dysfunctions combined with immunological insufficiency against an undiagnosed pathogen.

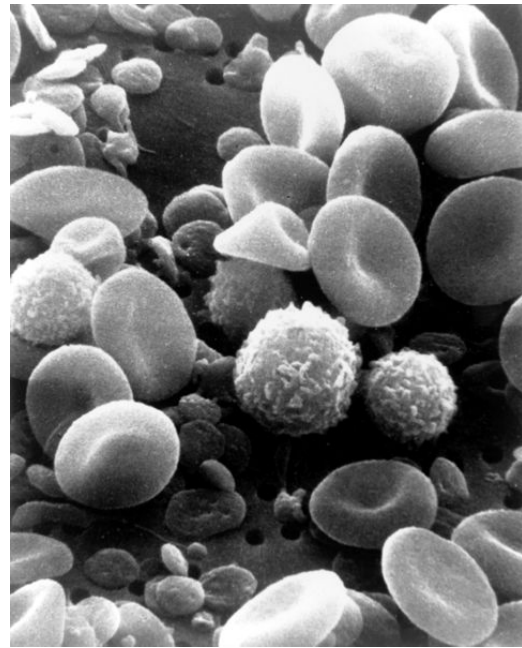


Figure 2 - Erythrocytes & WBC

This article presents the view that autoimmune interactions are interactions are [electrical](#), [magnetic](#), and [paramagnetic](#), **and** chemical in nature. Modern research provides at least fifteen different field phenomenon, which in aggregate, enable a strikingly different modeling for immunological cellular interaction.

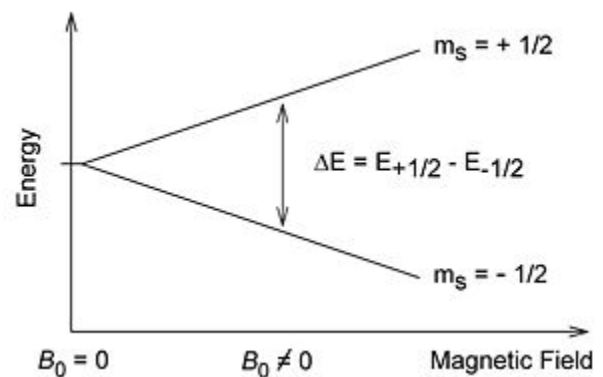


Figure 3 - Magnetic Spin Illustration

The traditional view that autoimmunity is chemically mediated, and the near absence of curative progress in treatment of autoimmune diseases, suggests that research and treatment, are misdirected.

The purpose of this document is to open a new chapter in autoimmune modeling.

The Cell Membrane

The [cell membrane](#) is the outside shell of the [cell](#). It is very thin, ranging from 3-8 nanometers. It hosts millions or billions of chemical structures that implement the cell's role in the body.

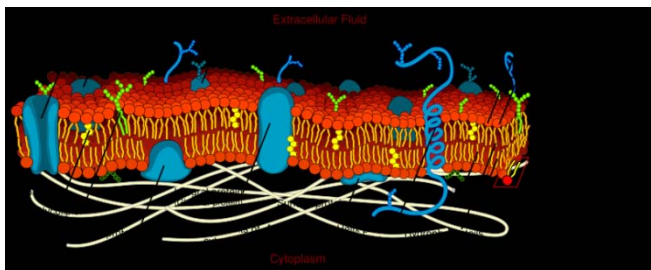


Figure 5 - Cell Membrane

The substrate is made of special [lipids or fats](#), which separate the inside of the cell from the outside of the cell in a [bilayer membrane](#). The membrane is special because it is chemical and electrical.

Membranes are structural components of cells, a fatty skeleton separating water compartments. The exterior membrane encapsulates the exterior of the cell, and interfaces to cell-to-body functions.

The external membrane encapsulates the cell, which in turn houses many other structures, which many are encased in cell membrane material.

Phospholipid structures provide the structure of the mitochondria, which produce energy. In other words, cell membrane material is a functional structure, providing both form and function to exterior and interior cellular functions, including multiple energy production processes.

[Here is a link to a truly excellent compilation of mitochondrial function sponsored by Dr's Clark and Cargile.](#) This is a 22,000 article compilation of about 120,000 references. It IS the place to start learning about cellular energy production.

As an [electrical](#) element, it is a [semiconductor](#), a [capacitor](#), a [resistor](#) and a [battery](#). As a chemical entity, it is simply indescribable.

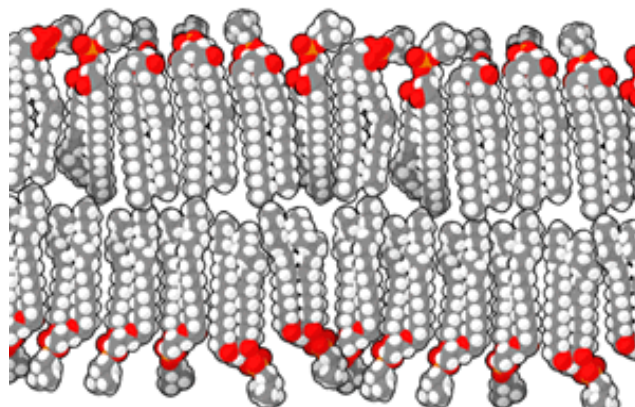


Figure 4 Bilayer Membrane

The Basis of Power

The cell membrane is a chemical and electrical [insulator](#). The inside and outside of the membrane hosts a pH differential. The [pH](#) differential creates a voltage, or electricity. This electricity is the power source for many essential functions in the cell membrane.

Anything that compromises the cell membrane [power](#) is a probable cause or cofactor in cellular malfunction.

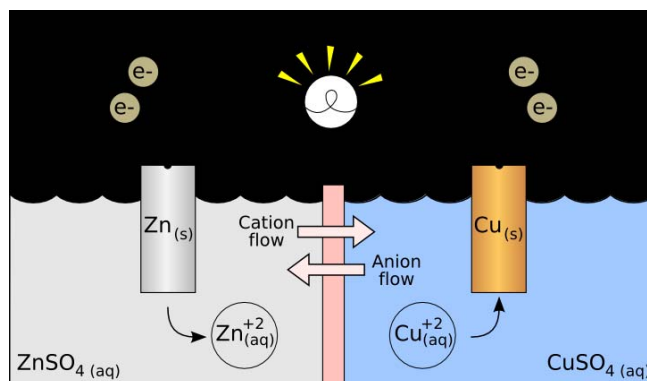


Figure 6 Chemical Battery

Compromise of either the cell membrane quality or the transmembrane pH differential inhibits the electrical functions of the cell, and prevents optimal cell function.

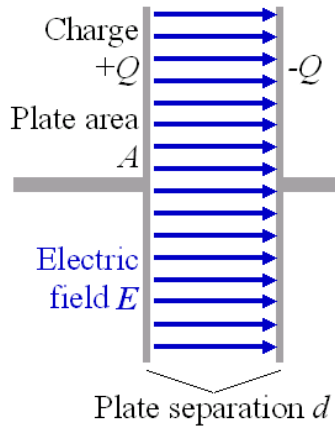


Figure 7 Capacitor

The intra cellular and extra cellular pH differential creates a voltage which provides chemical potential or battery for cell membrane functions. This power supply is the essential basis for hormone regulation, anabolic energy production, and ionic cellular respiration.

Anything that causes the cell membrane to leak electricity drains power. Both inadequate pH differential, and power leaks caused by garbage lodged in membrane structures, interfere with cellular functions that require power.

When cell membrane power is down due to lipid toxins, or pH imbalances cell just don't work. When cells don't work, the body doesn't work.

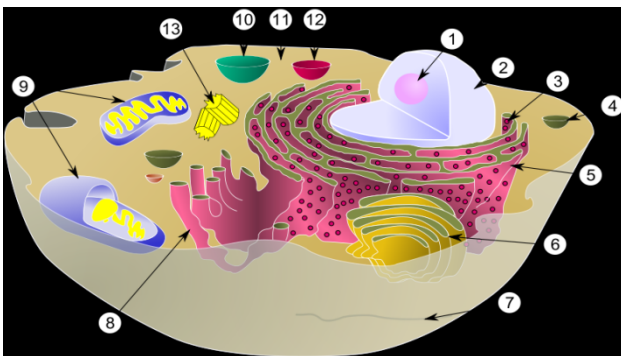


Figure 8 – Cell layout with internal lipid structures

There are three main aspects of cell-membrane power production:

1. The lipid substrate – must insulate the inside and outside and not leak power;
2. The pH differential – must be balanced to enable electricity, just like a car battery;
3. Raw Materials -- must be present to create chemical and electrical structures needed for the cell to work.

pH Culture

pH is utterly important because it enables the cell to produce electrical power to drive membrane functions.

$$\text{pH} = -\log_{10} \alpha_{\text{H}^+}$$

There is a tendency in health care to focus on pH without considering the membrane integrity. Singular focus on water chemistry tends to leave a big part of many people's health problems improved, but unresolved.

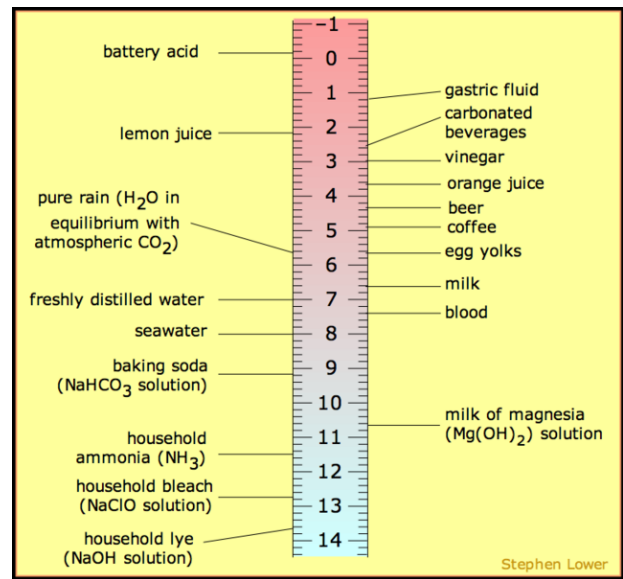


Figure 9 – pH of common substances

pH and water chemistry is relatively easy to shift because the body water compartments tend to quickly exchange. Water related protocols produce beneficial, but short term, results because they temporarily compensate for other more structural, or lipid dysfunctions.

April 15, 2008



In other words, water nutrient protocols increase cell voltage by temporarily improving the ability to maintain pH inside and outside the cell.

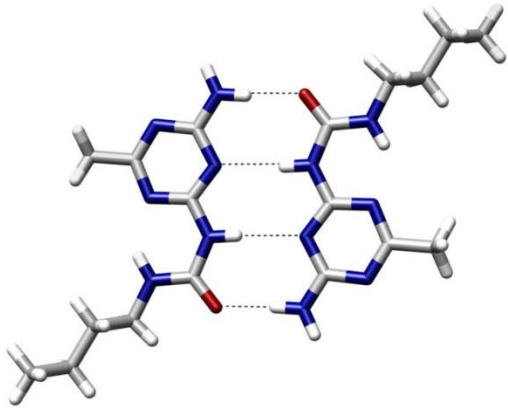


Figure 10 Molecular binding

Unfortunately, water chemistry leaves the cellular structural garbage in place, resulting in a tendency for short-term benefits.

Clearing both the membrane toxins, and the sources, and restoring the cellular process of automatic cleansing is critical to durable restoration of cellular health.

Autoimmune Dysregulation

The autoimmune system protects the body from invasion, and keeps friendly organisms under control.

The autoimmune system uses library of invader sensing capabilities. It responds to invading pathogens or overgrowth of symbiotic organisms, cells, bacteria, yeast, and fungi, using many different, and often barely understood sensing mechanisms.

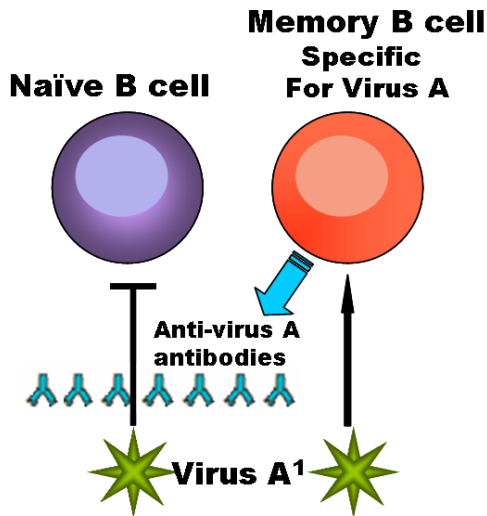


Figure 11a Autoimmune Memory Cells

Various forms of white blood cells, [lymphocytes](#), patrol the body continuously looking for imbalanced cells or organisms. Immune patrol lymphocytes, [B-Cells](#) & [T-Cells](#), and [Natural Killer Cells](#) maintain constant guard for invading or overgrown errant organisms.



Figure 11b Representation of TNF Alpha

[Tumor Necrosis Factor Alpha](#) is a member of the [TNF family](#) of [cytokines](#). This family of cytokines tag cells

for destruction by the immune system. They are created by [macrophages](#) and other immune system cells.

TNF-Alpha are a special class of proteins called [transmembrane proteins](#). In simple terms, they reach through the cell membrane. The [transmembrane protein](#) and [transmembrane potential](#) share the membrane dimension.

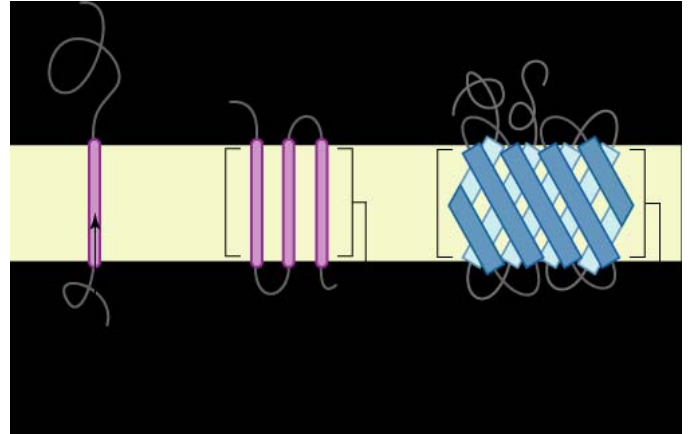


Figure 12 Transmembrane Structures span cell membrane

This author suggests that the TNF triggers [apoptosis](#), cell death, when a cell membrane voltage drops below a trigger threshold. TNF is therefore a defense mechanism against diseases which result from cells which cannot maintain membrane power.

Electrically Mediated TNF Cancer Response

Healthy cells exist with a transmembrane potential of about 70 mV. Cancer cells have a membrane potential from 15-30 mV. Since cancer cells exist below the apoptosis trigger voltage, TNF is a front line defense for cancer.

TNF was named after its main role, triggering death of cancer cells because of low cell membrane voltage.

TNF and Autoimmune Dysfunction

When cells membrane integrity deteriorates to a level near or below the TNF activation, the autoimmune targeting of seemingly healthy cells occur, resulting in various autoimmune diseases.

Tissues targeted by autoimmune diseases tend to share relatively low levels of oxygenation, as well as elevated cellular parasitism.

Individuals exposed to PEMF, or electromagnetic therapies, exhibit often striking recoveries, when energetics restore cellular immunity. Pulsed fields in the range of 200 nS, with intensity from 2-5 Tesla, often produce durable symptomatic reversal in less than six months.

Most subjects exhibit, significant decrease in joint deformation over about a 4 month period.

Recovery is the likely result of healing which appears to result because of decrease in sustained absence of localized autoimmune activity, likely resulting from increased electro-positive resistance to cellular parasites and probable energetic disadvantage to the pathogens.

These results were the likely result of synergistic effects:

- Each exposure improved the transmembrane potential for a period of 1-3 days, likely resulting in a tendency to inhibit autoimmune TNF targeting;
- PEMF exposure increases tissue oxygen availability through a variety of means, likely resulting in improved tissue oxygenation, which enabled healing which would not have been otherwise possible;
- PEMF exposure was not limited to the hands, and the results were consistent throughout the body.



Figure 13 PEMF Coupling

PEMF Cellular Effect Model

Pulsed electromagnetic fields create a significant turbulence at the cellular level. Brief, sub-microsecond, pulses generated when electricity bridges a gap, cause a short current to traverse a wire.

The short current causes a tendency for electricity to flow opposite the current in the wire near the exposure.

The result is a forward/backward electricity flow in the tissues near the wire.

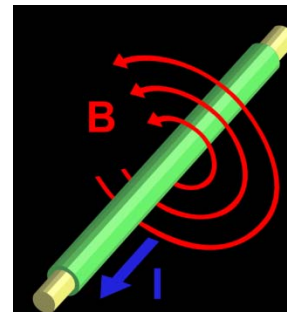


Figure 14 Magnetic Field around a Wire

Cells in the vicinity of the wire appear to absorb energy usually obtaining a durable increase in transmembrane potential, normally observed as apparent performance improvement in cell energetic structures, including, but not limited to, TNF signaling.

In-Vivo Pasteurization

Pulsed fields also exhibit destructive stress on certain microorganisms. Click the links below to review NIH references which indicate functional deactivation of various microorganisms in food products:

- [Saccharomyces cerevisiae, Alternate Article](#)
- [Salmonella Enteritidis](#)
- [Salmonella Enteritidis, E. coli and L. monocytogenes](#)
- [Escherichia coli, Listeria innocua and Saccharomyces cerevisiae](#)
- [Listeria Monocytogenes](#)
- [Escherichia coli, Salmonella Typhimurium and Listeria innocua](#)
- [Pseudomonas Fluorescens](#)
- [Lactobacillus plantarum](#)

- [Killing of Microorganisms by pulsed electric fields](#)
- [Mycobacterium paratuberculosis](#)

Alert readers may perceive that the anti-microorganism effects of pulsed fields are likely not limited to food products.

These research references strongly suggest that microbial deactivation is a by-product of PEMF exposure. The results of the exposure are generally:

- Proportional to the intensity of the PEMF pulse;
- Inversely proportional to the duration of the PEMF pulses – shorter pulses exhibit stronger anti-microbial effects.

In other words high intensity short pulses do a better job of disrupting microbial life cycle than low intensity long duration pulses.

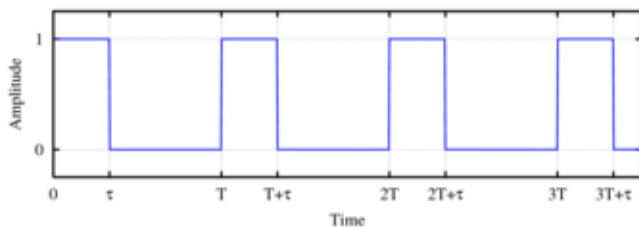


Figure 15 Pulse Waveform

PEMF exposure has the likely co-benefit of inhibiting pathogenic microbes, hence reducing the load on the autoimmune system.

Obvious versus Stealth

Autoimmune disorders reflect a tendency to attack cells with no obvious pathogens. The keyword here is **obvious**.

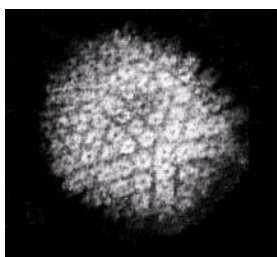


Figure 16 A Viral Image

There are a wide range of pathogenic factors which remain undetectable/un-testable using common laboratory assays.

Viral and other critters may in fact be resident inside cells. There are many examples of dormant cells, like HIV, Herpes, and Lyme parasites, which remain hidden beyond the reach of autoimmune system.

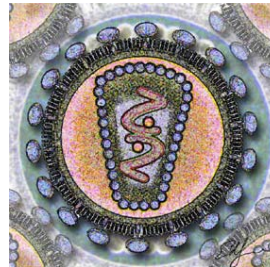


Figure 17 Viral Core with Cell docking structures

In other words, the inadequate or incomplete immune response is a likely cofactor in the ongoing autoimmune challenges faced by individuals with “autoimmune” conditions.

Blaming an “overactive” immune system for attacking “innocent” cells is at best naïve. The diagnostic inability to identify a pathogen doesn’t mean that there isn’t one.



Figure 18 Serum Spiral Pathogens

A zoo of stealth pathogens often create a curse on the immune system, damned to pursue the unachievable in pursuit of the unrecognizable.

Allopathic autoimmune treatments disable part of the immune system, normally inhibiting B-Cell synthesis, or crippling the TNF mediated response.

The alert reader will find it curious that B-Cell interventions take-out/inhibit B-Cell autoimmune

response, which is directly related with memory defense.

Autoimmune Neuropathology

Pathogens likely evolved to produce neuro-toxins as a defense mechanism. Disabling the brains of the immune system, specifically B and T cells, disables the immune response.

The strong similarity between immune system brain cells and the nervous system cells explains the frequent coincidence of autoimmune disorders and neuropathology.

When pathogens that evolved to disable the nerves of the immune system, accumulate in the nervous system, motor and cognitive neuropathology happens.

Cell Response and Cell Power

Cell energy is a critical factor in autoimmune conditions.

Resources which enable cells to do their proper job are essential and are usually overlooked in the therapeutic process. Life is energy.

Many toxins undermine the energetic cellular processes. The gradual degeneration of cellular energy, particularly of neuro-active cells, enables pathogens to propagate against continuously lessening resistance, commonly recognized as chronic progressive pathology common to autoimmune disorders.

Bilateral energetic compromise of both immune cells, and non immune cells, driven by pathogens and their toxins, protect the culprits, and propagates the degeneration, which hallmarks the dismal prognosis of autoimmune conditions.

Interventions which restore cellular energetic process tend to reverse the trajectory in autoimmune conditions:

- Detoxification helps remove pathogenic chemicals which inhibit natural cellular energy production;
- Immune support, instead of suppression, aids in overcoming pathogens which produce the toxins;

- Nutrient support provides building materials to create new healthy cells;
- Energetic support, enhances detoxification, and often lifts the immune system enough to overcome pathogens, and aids in damaged cell regeneration.

PEMF Energy Pump

Cells are batteries. Adding energy lifts their performance toward healthy levels.

Pulsed magnetic fields pump usable energy into cells. This energy enables many types of cells to compensate for damage which resulted from toxic, pathogenic or physical trauma.

Restored energetics often lifts immunological performance, detoxification, and functional cell performance toward healthy levels. In autoimmune conditions, this lift often aids in stabilization or reversal of autoimmune conditions.

Pulsed Immune Support

There is a natural correlation between size and frequency. Smaller objects resonate at higher frequency than large objects. This is true mechanically and energetically.

Ringing and Pathogens

Biological tissues stimulated with raw pulse energy resonate at their natural frequency.

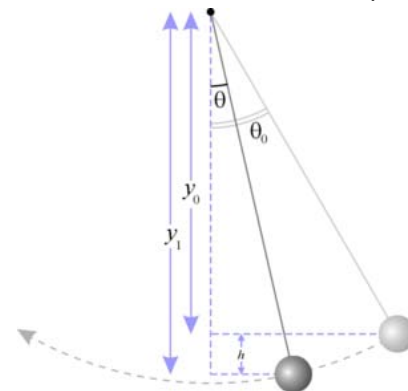


Figure 20 Resonance Illustration

Reinforcing the natural resonance strengthens the dominant organism. Similarly, strong master resonance creates an inhibitory energetic

disadvantage for pathogenic organisms, by disrupting non-harmonic, pathogenic elements.

Differential Pathogen Resonance

Pulsed fields assert differential effects on pathogens cells versus a host cells. While mammalian host cells tend to absorb pulse energy and use it, parasitic organisms, that lack energetic resonance with the host, experience stress.

Pulsed microbial inactivation, similar to pulse pasteurization, illustrates the effect of differential resonance on a host body and a parasite or pathogen. Acute pathogenic stress occurs when the host energetically resonates strongly, and that resonance disrupts the life-processes of pathogens.

Impulses ring the host at a host frequency, and pathogens, which are energetically interdependent, ring at a different frequency. When the frequencies collide, and the intensity is sufficient, the pathogens life process often fails.

PEMF exposure also provides anti-pathogenic effects most clearly documented in the ability to use PEMF as a sterilization and [pasteurization](#) technique, [NIH References Here](#). It's very handy to be able to do [in-vivo](#) sterilization, and to strengthen the host organism.



Figure 79 Parasitic form in Biological Medium

Figure 19 Parasitic form in biological medium

Tiny Pathogens

Tiny pathogens, like sub-cellular forms, respond less than cellular and multiple cellular forms to pulsed

energetics. The benefits of PEMF appear to result more from lifting the host energetics, which in turn, enhances the host's natural defenses.

New data however strongly indicates that at shorter pulse-widths, in the range of 200 ns, [exhibit suppressive effects on melanomas](#), multi-cellular pathogens.

Immune Support Model

Pulsed Fields appear to support the immune system by:

- Disabling pathogens that match the waveform of the pulses, large pathogens, bacteria as discussed earlier, respond to coarse pulses;
- Smaller pathogens are increasingly disrupted by smaller duration more intense pulses;
- Reducing the larger pathogenic forms supports the immune system by reducing overall autoimmune load, freeing resources for other anti-pathogen activities.

Pulsed Magnetic Fields and Biology

The situation in biological organisms is similar. The pulse is the ringer, causing the body to ring strong at its natural frequency. Anything which doesn't ring along, like pathogens, experience stress, and encounter an environmental disadvantage.

Electromagnetic Sensitivity Explained

Electrically weak individuals will ring loudly. This potent ringing creates strong sensations.

Individuals with electrically weak cells tend to be more sensitive to pulsed fields because their cells respond more readily to both beneficial and harmful radiation.

They tend to gain energy rapidly from pulsed fields which supports cellular metabolism. Likewise they tend to resonate with harmful radiations. Use of pulsed magnetic fields tends to decrease sensitivity to detrimental electromagnetic radiation by strengthening the native bio-field.

Autoimmune Cofactors

Diseases and the miss-targeted cells:



- [Multiple Sclerosis](#) – Attacks the cell membrane of nerves causing [degeneration in the myelin sheath](#). [1000+ NIH articles linking TNF and MS](#).
- [Rheumatoid Arthritis](#) – Attacks joints, typically the [synovium](#), appearing like the immune system has gone awry. Click here to [review 5000+ NIH articles linking TNF and RA](#).
- [Lupus](#) – seemingly attacks cells at random around the body. Click here to [review 700+ NIH articles linking TNF and RA](#).
- [Ankylosing Spondylitis](#) – Attacks the spine causing degeneration. Click here to [review 435+ NIH articles linking TNF and AS](#).

Each of these autoimmune disorders shares several curious attributes:

- Individuals with autoimmune diagnosis tend to have exhibit potassium deficiency; Click here to [review 208+ NIH articles linking autoimmune diseases and potassium deficiency](#).
- Tests show elevations in Tumor Necrosis Factor;
- Symptoms respond to drugs which suppress TNF;
- Symptoms are eased by factors that suppress TNF, curcumin;
- Symptoms respond to drugs that inhibit B-Cell responses;

The Potassium Mystery

Obscure references document the relationship for systemic potassium deficiency and rheumatoid arthritis.

Depressed system potassium levels are consistent with virtually all autoimmune disorders. The most visible telltale for anabolic metabolism dysfunction is visible in blood tests:

- High serum potassium, above 4.5mEq) as the body ineffectively elevates circulating potassium in attempt to increase cellular levels (Revici), above ;

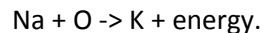
- High red blood cell sedimentation rate, above 15 ml/hr;
- Low Eosinophilia levels, below 100 cmm;
- Low urinary pH, below 6.4;
- Low urinary surface tension;
- Low calcium or chloride excretion.

Generally, autoimmune disorders are predicated by a long-term history of anabolic metabolism dysfunction.

In many cases there is a history of poor sleep in women, and accelerated aging in men. Unlike women, men with a cellular anabolic imbalance tend to sleep because elevated testosterone tends to enable sleep.

The Secret Potassium Source

Cellular potassium comes from the cold fusion of:



This well documented secret was described and confirmed by Louis Kervran, and confirmed by Solomon [Goldfein working for the US Army](#). Goldfein also confirmed the fusion of:

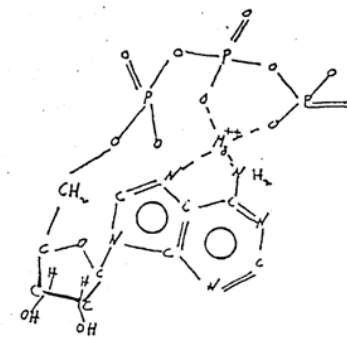
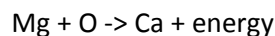


Figure 21 Goldfein illustration coupled ATP Cyclotron by US Army

These two mineral conversion equations provide a [Rosetta Stone](#) for irresolvable metabolic syndromes, including autoimmune disorders and several forms of chronic fatigue.

Potassium Anabolism

The Potassium fusion reaction, $\text{Na} + \text{O} \rightarrow \text{K}$, is a major driver in the anabolic energy production.



As anabolic energy production degenerates, cellular and systemic potassium levels decline, resulting in a range of conditions relating to:

- Anabolic Dysfunction – Healing deficiency;
- Cellular Potassium Deficiency syndromes – particularly neurological transmission dysfunctions resulting from axon potassium deficiency;
- Neural hyper-excitability syndromes, epilepsy, tinnitus, resulting from attenuated neural signal to neural noise ratios;
- Systemic Potassium Deficiency syndromes.

In the meantime, cellular mitochondria compensate, overworking, and depleting Magnesium reserves, and other oxygen-related metabolites.

Cellular sleep degenerates as mitochondrial energy production dominates the life functions. Rest is rare and of poor quality.

Potassium and Autoimmune Symptoms

These references correlate depressed systemic potassium levels with Rheumatoid Arthritis:

- [Bone turnover in early rheumatoid arthritis](#)
- LaCelle, P.L., et al. 1964 "An Investigation of Total Body Potassium in Patients with Rheumatoid Arthritis." *Proc. Ann. Meeting of the Am. Rheumatism Assoc. Arth. Rheum.* 7; 321.

In all cases autoimmune diseases are preceded by breakdown in cellular anabolic performance, and consequently cellular potassium deficiency is guaranteed in autoimmune disorders.

The critical oversight in research literature is that cellular potassium is a by-product of anabolic metabolism.

Dietary potassium sources weakly influence cellular potassium levels because the cellular potassium channels are one way – out, not in.

Modest exceptions occur when dietary potassium is encapsulated, chelated into aspartate, orotate forms, or lipid structures which integrate with the cell membrane.

Cellular potassium, and eventually systemic potassium levels drop because the process which creates the potassium fails, not because of potassium intake is deficient.

The biased view that potassium related issues are always caused by potassium channel dysfunction reflect the dominant oversight that cellular potassium is a metabolic by-product.

Cellular Energetic Anabolism

PEMF exposure, which lifts the cellular energetics, especially the transmembrane potential often helps to restart cellular anabolic metabolism.

The electric fields across the cell membranes are huge, often exceeding 3 million Volts / meter. Toxins that pollute the membrane dielectric leak electricity and prevent development of higher membrane potential which enables cellular anabolic performance.

The Anabolic Potassium Link

Anabolic failure, synonymous with long-term insomnia, precedes immunological failure by years particularly in women.

Anabolic failure is typically due to toxins and pathogens which directly undermine cellular of transmembrane potential, or TMP. TMP is critical because it is the power supply for virtually all of the processes that link cells to their operative roles in the body. When the power is down, many cell functions don't work well.

Over time, failure of the anabolic process creates cellular potassium deficiency, and finally systemic deficiency. Revici said that cellular potassium deficiency is typically indicated by elevated serum potassium levels as the body saturates the serum attempting to coax potassium back into the cells.

Eventually the body becomes so potassium depleted it fails to be able to maintain serum levels, and the breakdown progresses to subsequent levels.

Lupus and RA

Lupus is weakly differentiated from Rheumatoid Arthritis. Symptomatic differentiation between the two conditions relates to the location tendency of inflammation symptoms. Lupus floats while Rheumatoid Arthritis affects primarily joint tissue.

80% of adults with rheumatoid arthritis test positive for rheumatoid factor. Moreover, individuals with Lupus frequently test positive for rheumatoid factor.

Therapeutic Response Model

The approach suggested in this essay seeks to improve the cell membrane voltage by correcting systemic and nutritional factors which compromise cell membrane power.

TNF autoimmune triggering targets electrically weak cells. Electrically weak cells result from deficiency in cellular power. Restoration of normal cellular energy is broadly effective at restoring autoimmune miss-targeting.

Generally, protocols that restore cellular power production reduce the tendency for immune miss-targeting.

[Cell power restoration is broadly effective at treating autoimmune disorders.](#)

Autoimmune Syndromes

The pattern in autoimmune syndromes is generally the same:

1. Toxins or other factors cause compromised cell membrane performance;
2. Resulting in low cell membrane voltage (low membrane voltage is common to most cancer cells);
3. Low cell membrane voltage creates vulnerability to Tumor Necrosis Factor, TNF, autoimmune response;
4. TNF activation causes inflammatory and immune response.

Neurological autoimmune syndromes usually have symptoms from neural potassium deficiency, resulting from compromised anabolism. Neural potassium deficiency causes degenerate impulse transmission through nerves.

Rheumatoid Arthritis / Ankylosing Spondylitis:

1. Synovium cells surrounding joints become weakened due age, stress or other environmental factors;
2. Resulting in a disrupted anabolic energy production;
3. Resulting in cell membrane potential falling below the trigger threshold for TNF triggering;
4. B-cells initiate immune response on tagged cells causing destruction of these cells;
5. The body deposits calcium in to isolate the rest of the body from the diseased cells.

Multiple Sclerosis

1. Nerve cell sheaths become weakened due to pathogenic or systemic toxin accumulation;
2. Resulting in a disrupted anabolic energy production;
3. Which causes a decline in intra-neural potassium;
4. Which causes a decrease in the ability of the nerve to carry impulses;

5. As the condition worsens due to systemic degeneration and toxin accumulating in the nerve sheath (cell membrane), intracellular potassium deficiency accumulates;
6. Resulting in a continuous deterioration of neural function.
7. Also, resulting in cell membrane potential falling below the trigger threshold for TNF activation;
8. B-cells initiate immune response on tagged cells causing destruction of these cells
9. Accelerating neural destruction in advanced disease stages.

Lupus Erythematosus

1. A group of cells become weakened due age, stress or other environmental factors;
2. Resulting in a disrupted anabolic energy production;
3. Resulting in cell membrane potential falling below the trigger threshold for TNF triggering;

B-cells initiate immune response on tagged cells

Autoimmune Cofactor Candidates

Cofactor	Role	Supports
Cell Membrane Integrity	Defines the ability for cells to maintain electrical integrity.	All hormonal and electrical integrity of the cell.
Intra/Extra cellular pH differential	Creates energy for cell membrane functions, hormone receptors, and autoimmune cell evaluation.	Autoimmune sensing of diseased cells.
Ambient Autoimmune Load	Determines the resources available to support normal autoimmune performance.	Autoimmune resources to available to eradicate stealth and other pathogens.
Stealth Pathogen Prevalence	Absorbs autoimmune resources.	
1,25-dihydroxyvitamin-D in response to intracellular bacteria	Describes masking mechanism used by intra-cellular bacteria/mycoplasma evade autoimmune eradication.	See Marshall protocol

For Protocol Information

Contact Whole Health Research Alliance, LLC, 970 372 4274, or email: contact@dshedu.com or contact@eetiology.com

Artwork in this document is reproduced under [GPL License](#), and may be reproduced from original sources at www.wikipedia.org.