

# Energy Medicine Help Drive the Evil Spirits (toxins) Out

Discovering the link between toxins,  
Nitric oxide and LIGHT!

*Dr. Garry F. Gordon, MD, DO, MD(H)  
Gordon Research Institute (GRI)  
Payson, Arizona - January 29, 2013*

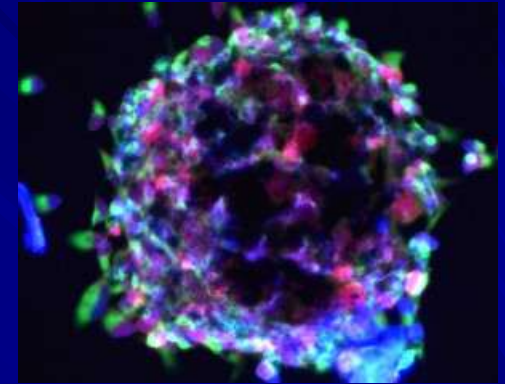


## **WEBINAR DISCLAIMER**

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## Exploring and driving the future of medicine and the development of exponentially advancing technologies to address humanity's challenges

**Cancer Treatments Made to Order:** *Personalized Treatment for Cancer with frequent monitoring, captures and sequences malignant cells, detects changes and optimizes therapy*



**Daily Test Compares Gene Expression Before, After Exercise:** *The \$100 genome and related technologies will increase understanding and use of the base genomic code and the ability to inexpensively measure gene expression in normal and diseased tissues*

**Toothbrush upgrade – Monitoring chronic illness and disease through Exhaled Breath:** *as capabilities of equipment only found in hospitals and laboratories, more test devices will have a size and price range that makes them practical for home use.*



## iHealth – Wireless Body Analysis Scale

Measure, track and share 9 different characteristics of your body composition on our free iHealth mobile app. You can use it online or off. And our scale supports up to 20 users, so go ahead, compare your muscle mass with the whole family.



Our iHealth scale supports up to 20 users, so go ahead, compare your muscle mass with the whole family.

Our free iHealth MyVitals mobile app brings all of our iHealth products to life. Measure, track and share 9 different characteristics of your body composition. You can use it online or off.



## AliveCor's Heart Monitor

*for use with iPhone® 4 and 4S*

AliveCor's Heart Monitor is cleared by the FDA for sale in the U.S. for use by licensed medical professionals to record, display, store, transfer, and evaluate single-channel electrocardiogram (ECG) rhythms.

"The ability to get an ECG on a Smartphone is remarkably transformative—an icon of how medicine of the future will be radically rebooted."

**Eric Topol, M.D.**



To generate a Lead I ECG, rest the electrodes on the fingers from each hand (iPhone Home button should be on the right). The app senses skin contact on the sensors and when an acceptable connection is made it counts down to initiate the ECG recording.

### Who can buy the Heart Monitor?

AliveCor's Heart Monitor is intended for use by licensed U.S. medical professionals. The device is not currently available for pre-sale to patients and consumers. More information will be available for patients and consumers in January.

# TOXINS

The average US city is home to approximately  
**77,000 toxins**  
which we breathe, drink, ingest and absorb  
on a daily basis.

Our bodies are designed to release accumulated toxins through bowel movements, urination, sweating or saliva; however, if we have poor digestion or constipation, our systems will find other ways to release toxins *such as* skin rashes, kidney and liver infections or colon cancer.

**An ongoing detoxification program is critical to reduce toxic buildup and prevent disease.**

## The Environmental Working Group studies that have shown:

134 chemicals are shown to cause CANCER

151 chemicals cause BIRTH DEFECTS

154 are HORMONE DISRUPTORS

186 chemicals contribute to INFERTILITY

130 chemicals cause IMMUNE SYSTEM TOXICITY

158 chemicals are NEUROTOXINS

Autism now 1 in every 150 children.

57% increase in childhood brain cancer.

84% increase in acute lymphocytic leukemia in children (1975 – 2002)

About 7.3 million American couples have trouble becoming pregnant, or carrying to term, a 20% increase in the last 10 years. Sperm count decrease one percent every year.

***“The combined evidence suggests that neurodevelopmental disorders caused by industrial chemicals has created a silent pandemic in modern society.” ~ Lancet, November 8, 2006.***

**WATCH THE VIDEO: <http://video.yahoo.com/watch/6431545/16676271>**



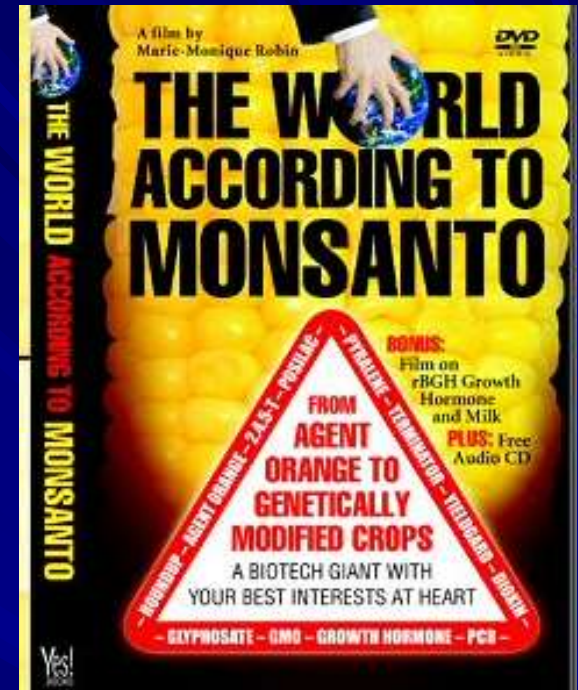
From  
Environmental Working  
Group



# GM DIET SHOWS TOXIC REACTIONS IN THE DIGESTIVE TRACT

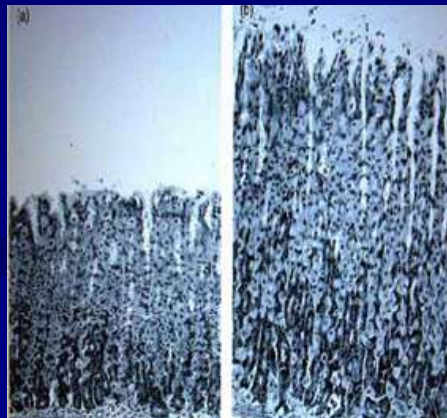
The very first crop submitted to the FDA's voluntary consultation process, the **FlavrSavr** tomato, showed evidence of toxins. Out of 20 female rats fed the GM tomato, 7 developed stomach lesions.

Mice fed potatoes **engineered to produce the Bt toxin** developed abnormal and damaged cells, as well as proliferative cell growth in the lower part of their small intestines (ileum).<sup>23</sup> Rats fed potatoes engineered to produce a different type of insecticide (GNA lectin from the snowdrop plant) also showed proliferative cell growth in both the stomach and intestinal walls.



**Rats fed GM potatoes showed proliferative cell growth in the stomach and intestines.**

**Stomach Lining**



**NON-GM**

**GM**

**Intestinal Wall**



**NON-GM**

**GM**



# IS SUGAR TOXIC?

New research coming out of some of America's most respected institutions is starting to find that sugar is a toxin and is a driving force behind some of this country's leading chronic diseases, including Cancer obesity, type II diabetes, hypertension and heart disease.



(CBS News) If you are what you eat, then what does it mean that the average American consumes 130 pounds of sugar a year? Sanjay Gupta reports on new research showing that beyond weight gain, sugar can take a serious toll on your health, worsening conditions ranging from heart disease to cancer. Some physicians go so far as to call sugar a toxin.

Since the 1970s, sugar consumption has gone down nearly 40 percent, but high fructose corn syrup has more than made up the difference. Dr. Robert Lustig, a pediatric endocrinologist at University of California, San Francisco, says they are both toxic because they both contain fructose – and that's what makes them sweet and irresistible... and dangerous.

Cancer Res Published OnlineFirst January 3, 2013.

## Acidity generated by the tumor microenvironment drives local invasion

Veronica Estrella, Tingan Chen, Mark Lloyd, et al.

The morbidity and mortality associated with cancer is largely related to tumor invasion and formation of metastases. Extensive application of FDG-PET imaging to clinical cancers has clearly demonstrated the vast majority of malignant tumors metabolize glucose at high rates.

We propose **there is a direct, causative link between increased glucose metabolism and the ability of cancer cells to invade and metastasize.**

Elevated glucose metabolism is the proximate cause of increased acidity in the tumor microenvironment. Furthermore, most tumors develop an aberrant vasculature network that tends to be poorly organized and leaky, disrupting blood flow and hampering the delivery of oxygen. This has a two-fold effect on tumor acidity.

First, it subjects tumor regions to poor perfusion and hence, poor oxygenation (36). Low oxygenation increases glycolytic flux via the Pasteur Effect. Notably, **even in tumor regions with adequate oxygen supply, glycolysis and acid production are up regulated via the Warburg Effect.** Second, **poor perfusion hampers the ability of the microenvironment to remove tumor derived acid through diffusion.** Consequently, the extracellular pH of tumors is typically highly acidic, and this will inevitably result in acid diffusion into the surrounding stroma.

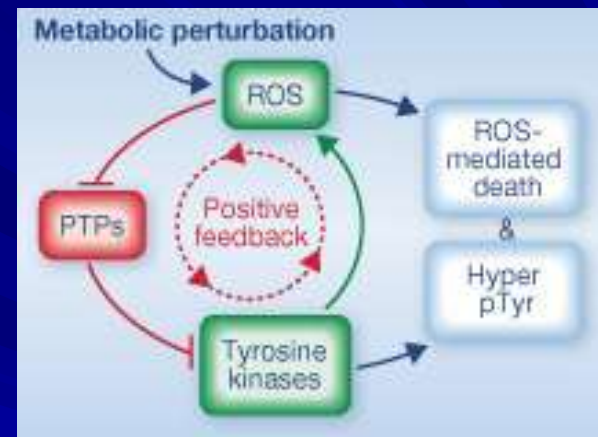


## Glucose deprivation activates a metabolic and signaling amplification loop leading to cell death

Graham NA, Tahmasian M, Kohli B, et al.

In summary, cellular redox homeostasis is maintained by the balance between ROS generation by required metabolic functions and ROS elimination. Likewise, signaling homeostasis is controlled by balancing kinase and phosphatase activity.

Here, we demonstrate that the **cellular microenvironment (i.e., nutrient availability)** can alter the cellular redox balance, provoking a signaling-based positive feedback loop that amplifies ROS levels above a toxicity threshold resulting in cell death.



This positive feedback loop demonstrates the complex, systems-level integration of homeostatic control mechanisms for metabolism (e.g., redox balance) and TK signaling (e.g., PTPs).

Furthermore, this systems integration offers a scaffold for synergistic combinations of therapeutics targeting signaling, metabolism, and redox homeostasis.

# Dr. Garry Gordon's F<sup>2</sup>IGH<sup>2</sup>T For Your Health Program

**F<sup>2</sup> = Food and Focus** - related aspect and leaky gut, and Focus (positive mental outlook): Acidophilus, Avoid food sensitivities (wheat, dairy) food supps to include Vitamin C and D

**I = Infections** - causing cancer, cardiovascular disease, autoimmune diseases: Ozone/UVB, HBO, Silver, Vit A, C and D including IV Vit C

**G = Genetics** - and epigenetics and methylation issues needed for detoxing B-12, MSM, TMG, 5'MTHF

**H<sup>2</sup> = Heavy Metals and Hormones** - Daily detoxification of mercury, lead; Hormonal balance and support for both men and women: Oral Chelation, Zeolite, DHEA, HRT, Melatonin, GH Support, Thyroid

**T = Toxins** - BPA, phtalates, and other toxins including household chemicals and everyday products: Exercise, IR/FIR Sauna, PEMF, Magnetics, Electrotherapy, cold (soft) lasers.

**E<sup>2</sup> = Energy and Exercise** - PEMF or pulsed electromagnetic frequency therapy that promotes healing through

**Magnetically Induced Cellular Exercise, or MICE**



# Hypoactive Sexual Desire Disorder: "I'm Not In the Mood"



Hypoactive sexual desire disorder (HSDD) is the most common form of female sexual dissatisfaction (FSD), **affecting 30-40% of women**, and occurs when there is a persistent lack of desire or absence of sexual fantasies. In other words, you're rarely in the mood; you neither initiate sex nor seek stimulation.

Obviously, lifestyle factors influence the desire for sex. Sometimes a medical condition is the underlying cause of low libido, including:

- **Medication Use:** Many commonly prescribed drugs, such as anti-hypertensives, antidepressants and birth control pills, interfere with sex drive, arousal and orgasm by affecting the balance of sexual hormones and the transmission of chemical messengers.
- **Menopause:** The onset of menopause, either surgical or natural, is characterized by a gradual decline of the hormones estrogen, progesterone and testosterone.
- **Depression:** A common symptom of depression is diminished sex drive, which, in turn, can exacerbate depression. Studies indicate that 12 percent of all women will experience clinical depression at some point in their lives.

**HSDD is also attributed to  
Diminished or Low nitric oxide levels**

# Viagra: How Young Is Too Young?

By Martin Downs, MPH  
for WebMD



Rafael Palmeiro seems an unlikely Viagra pitchman.

The Texas Rangers slugger is only 37 and won't admit to having erection problems, yet he recently agreed to appear in ads promoting the drug. The deal has made people wonder whether Palmeiro really represents men with erectile dysfunction, or whether Pfizer, the company that makes Viagra, wants to persuade young men to try it for fun.

It's true that erectile dysfunction is more common in older men, but many potential Viagra users are hardly senior citizens: **About 40% of 40-year-old men in the U.S. have some degree of erectile dysfunction. Most Viagra users today, according to Pfizer, are in their early to mid 50s.**

It seems that Viagra can make sex better for women, too. Like the penis, the clitoris is erectile tissue -- spongy tissue that becomes engorged with blood during sexual excitement. By increasing blood flow to the clitoris, Viagra may heighten a woman's sensation and arousal. It also seems to increase vaginal lubrication.

**Instead of Viagra – increase NO levels naturally!**

Patient Money

## Treating Chronic Pain and Managing the Bills

By MICHELLE ANDREWS

Published: February 4, 2011

**“If you tally up everybody who has chronic, recurring back, headache and musculoskeletal problems, it includes almost everybody by the time people get into their 30s,”** said Dr. Perry Fine,

a professor of anesthesiology at the Pain Research Ctr and the University of Utah, and incoming chairman of the American Academy of Pain Medicine.

Medication is a mainstay for people with chronic pain, and drug therapy is one of the few chronic pain treatments that insurance plans reliably cover. People with severe chronic pain may take prescription opioids like codeine and oxycodone, as well as antidepressants and muscle relaxants.

**“People in pain don’t exercise,”** said Penney Cowan, founder and executive director of the American Chronic Pain Association. Big mistake. **Exercise is one of the most effective and most affordable ways to manage chronic pain. Gentle stretching and exercises to increase range of motion and strength training are all helpful.**

The New York Times



<http://www.nytimes.com/2011/02/05/health/05patient.html>

## A Pain-Drug Champion Has Second Thoughts

By Thomas Catan and Evan Perez

Two decades ago, the prominent New York pain-care specialist drove a movement to help people with chronic pain. He campaigned to rehabilitate a group of painkillers derived from the opium poppy that were long shunned by physicians because of their addictiveness.

Dr. Portenoy's message was wildly successful. Today, drugs containing opioids like Vicodin, OxyContin and Percocet are among the most widely prescribed pharmaceuticals in America.

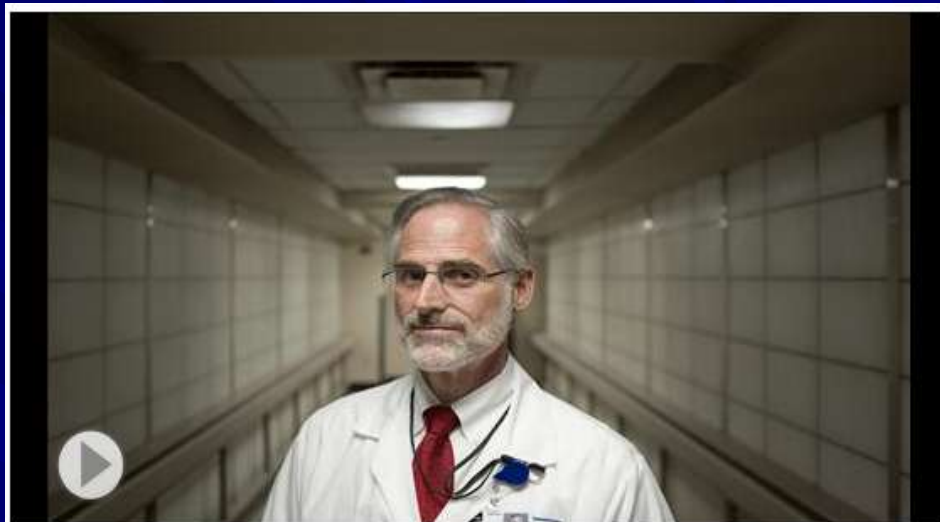
**Opioids are also behind the country's deadliest drug epidemic.**

Dr. Portenoy said it was "quite scary" to think how the growth in opioid prescribing driven by people like him had contributed to soaring rates of addiction and overdose deaths. "Clearly, if I had an inkling of what I know now then, I wouldn't have spoken in the way that I spoke. It was clearly the wrong thing to do".

# THE WALL STREET JOURNAL

U.S. EDITION

Monday, December 17, 2012 As of 11:36 AM EST



More than 16,000 people die from opioid overdoses every year. Now, Dr. Russell Portenoy, who campaigned for wider prescription of pain medications like Vicodin, Oxycontin and Percocet, is having second thoughts. WSJ's Thomas Catan reports. Photo: Bryan Thomas.



Current Review of Pain  
1998, Volume 2, Issue 4, pp 211-216

## Relevance of nitric oxide in pain mechanisms and pain management

Piotr K. Janicki MD, PhD; Magdalena Jeske-Janicka MD

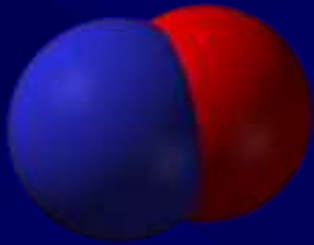
### Abstract

**Nitric oxide (NO) may be involved in the mechanisms of pain generation and transmission throughout the central and peripheral nervous systems (including brain and spinal cord and perivascular tissue and peripheral nerve terminals) and locally released pain mediators (including formation of inflammation and vascular edema).**

**NO mechanisms are also involved in the analgesic activity of nonsteroidal anti-inflammatory drugs, opioids, and local anesthetics. These novel observations dictate new approaches to the pharmacologic treatment of migraine, neuropathic pain, and other forms of chronic, intractable pain that are resistant to classical pharmacotherapy.**

**The new strategies of pharmacologic pain treatment are increasing rapidly due to the availability of new drugs modulating the NO-activated cascade and soon may be available for clinical use.**





## **What is Nitric Oxide (NO)?**

**NO is an important cellular signaling molecule and neurotransmitter involved in many physiological and pathological processes.**

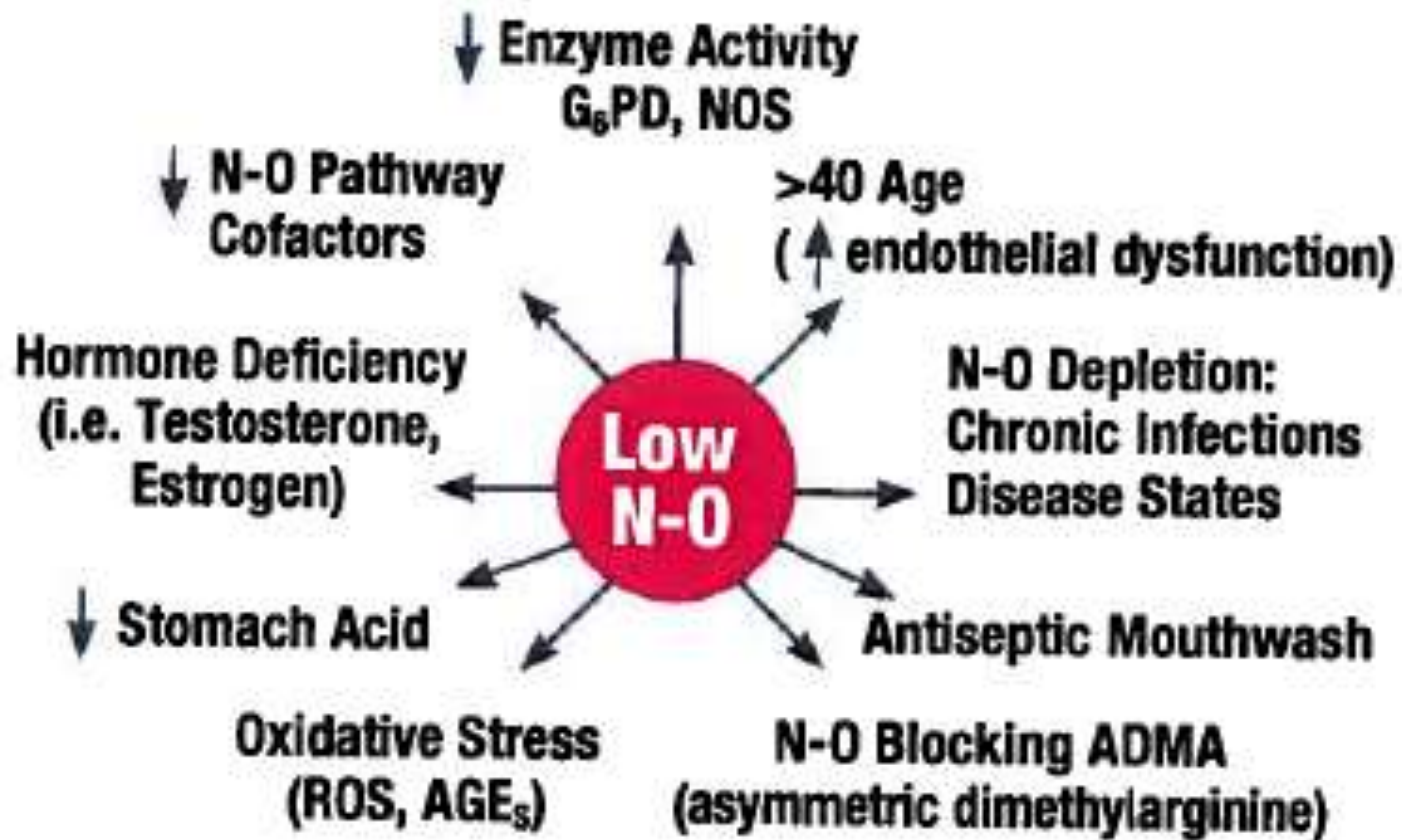
**NO is a powerful vasodilator with a short half-life of a few seconds in the blood, but it affects blood flow and nerve responses very rapidly. Small increases in NO lead to increased circulation and to better sensory perception.**

**NO metabolism is necessary for normal circulation (venous, arterial, and lymph flows) and for the ability to sense pain, temperature, and pressure. Diabetic patients have deficits in circulation, which often lead to blindness, kidney dysfunction, heart disease, and ulcers in the lower legs.**

**Pharmaceuticals that work on increasing NO are nitro-glycerin, used for angina and other heart conditions, and Viagra® (sildenafil), the popular “magic blue pill” that is widely prescribed for erectile dysfunction.**

**Tissues that are hypoxic (deprived of good, normal circulation) can not produce as much NO as do normal, well-oxygenated tissues.**

## Some Causes of Low N-O

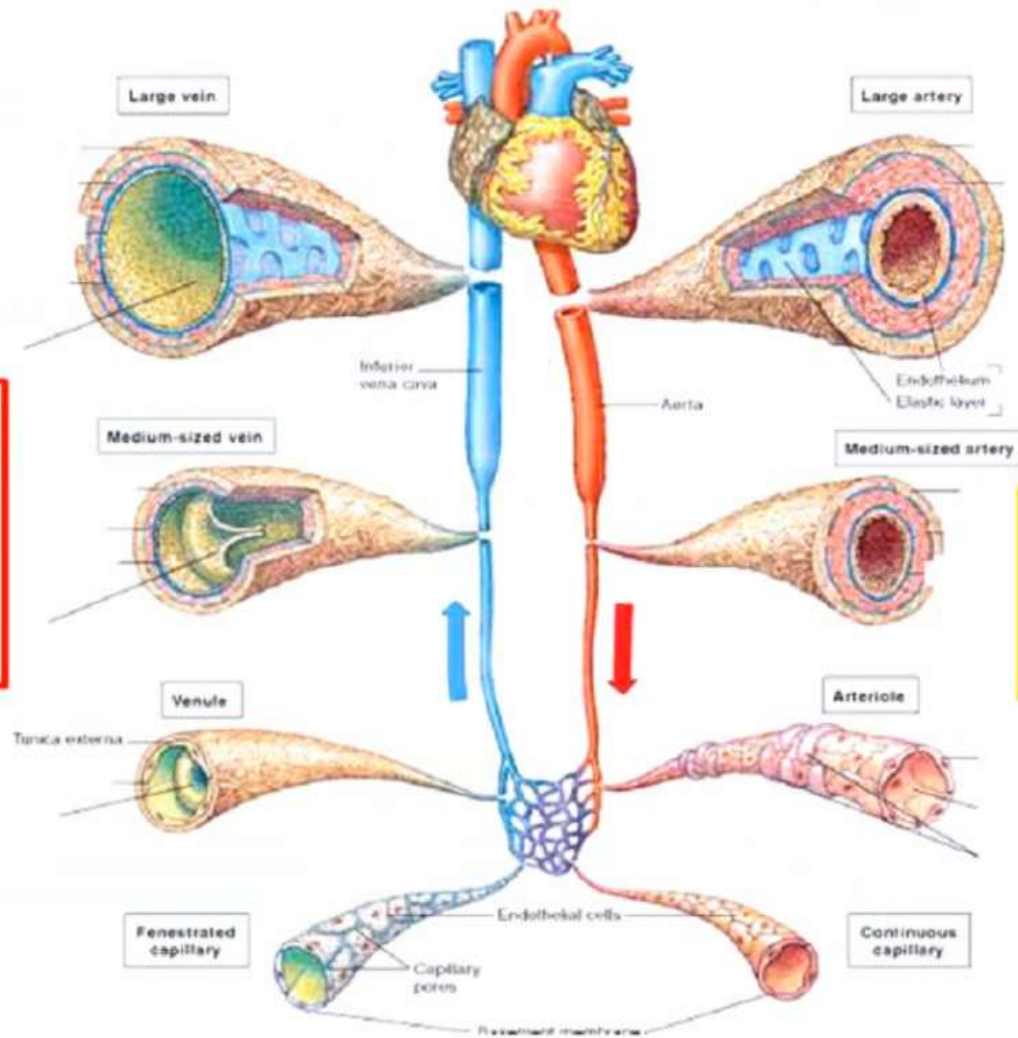


**Over the last 20 years,  
research has linked the loss of NO  
with many symptoms of aging:**

- Dementia
- Eye Disease
- Infection
- Insomnia
- Depression
- Osteoporosis
- Erectile Dysfunction
- Hypertension
- Atherosclerosis/Arteriosclerosis
- Diabetes
- Fatigue/Sedentary lifestyle
- Asthma/COPD/Lung disease
- Bladder dysfunction
- Kidney disease
- Premature-aged skin (AGEs)
- Poor wound healing
- Hormone imbalance
- Abnormal cell growth
- Poor neurotransmitter function
- Abnormal blood viscosity

# The Endothelium – Our “Third” Brain

## Our Heart and Vessels: Veins and Arteries, Arteriole and Capillaries

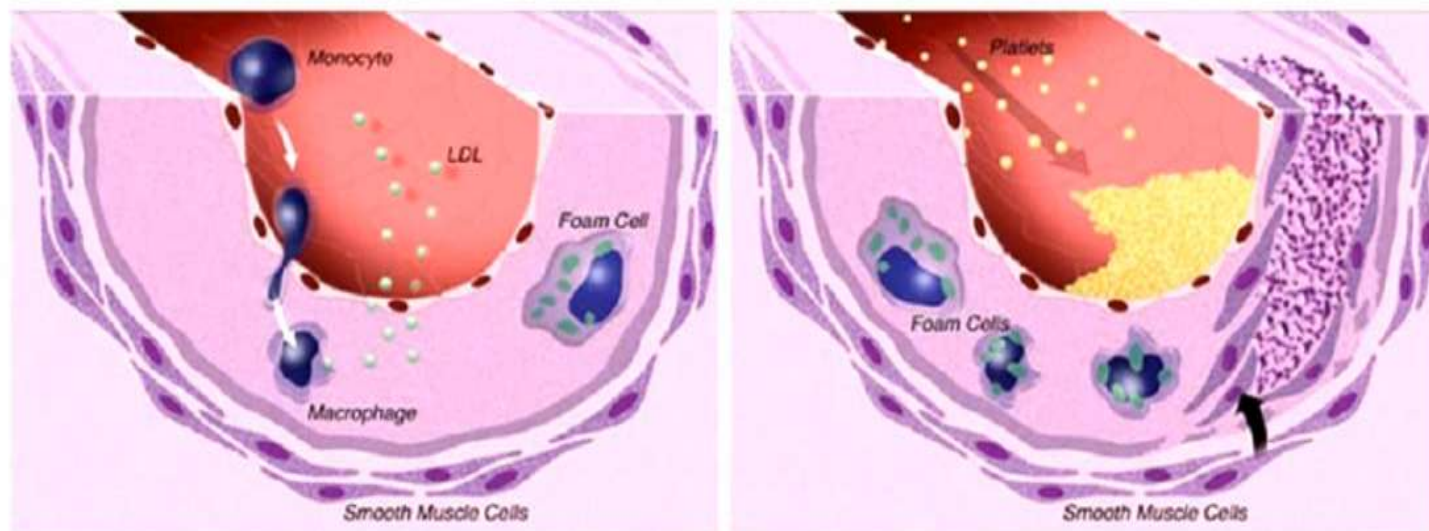


**Venous  
and  
Arterial System  
Health  
Are  
Dependent on:**

**Endothelium  
Integral  
Health**

## Several Risk Factor, like:

Gender, Smoking, Sedentary, Hypertension, Obesity, Metabolic Syndrome, Unhealthy Diet ...



The Endothelium "Damaging Starts

# Why the Endothelium is considered an “Organ”

- *It is because of:*
- > it is Responsive to Stimuli: Photonic (Quantum), Ionic, osmotic, Biochemical: Hormonal and Enzymatic
  
- It is highly responsive to the photonic signaling from  
**Nitric Oxide**
  
- There are many published materials about the **benefits of nitric oxide**, but it all started to gain a attention from the work of three scientists. In 1998, three American scientists were awarded the Nobel Prize in Medicine for discovering a vascular signaling molecule called nitric oxide. Why, you say is nitric oxide so important? Nitric oxide revolutionized conventional scientific reasoning because it was the first molecule discovered to literally communicate with another molecule. Why does that matter? When nitric oxide is made by the cells in our blood vessels, it signals the surrounding arterial tissues “telling” them to relax. **Nitric oxide optimizes circulation and is involved in virtually every organ system in our body.**



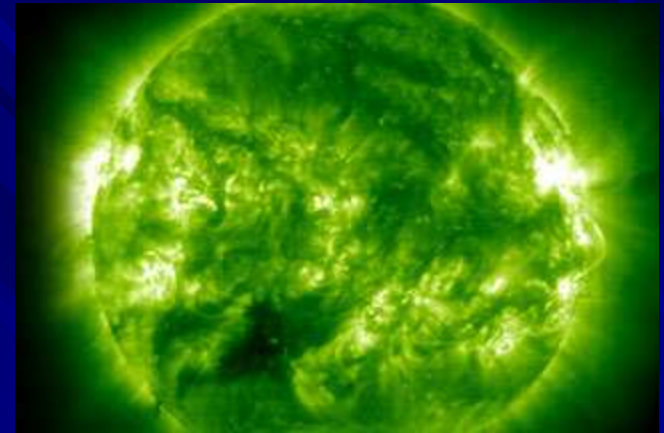
**“We are all light deficient  
and this deficiency may be  
the source of our physical and  
emotional problems.”**

**~ Dr. John Ott, Light Therapy Pioneer**

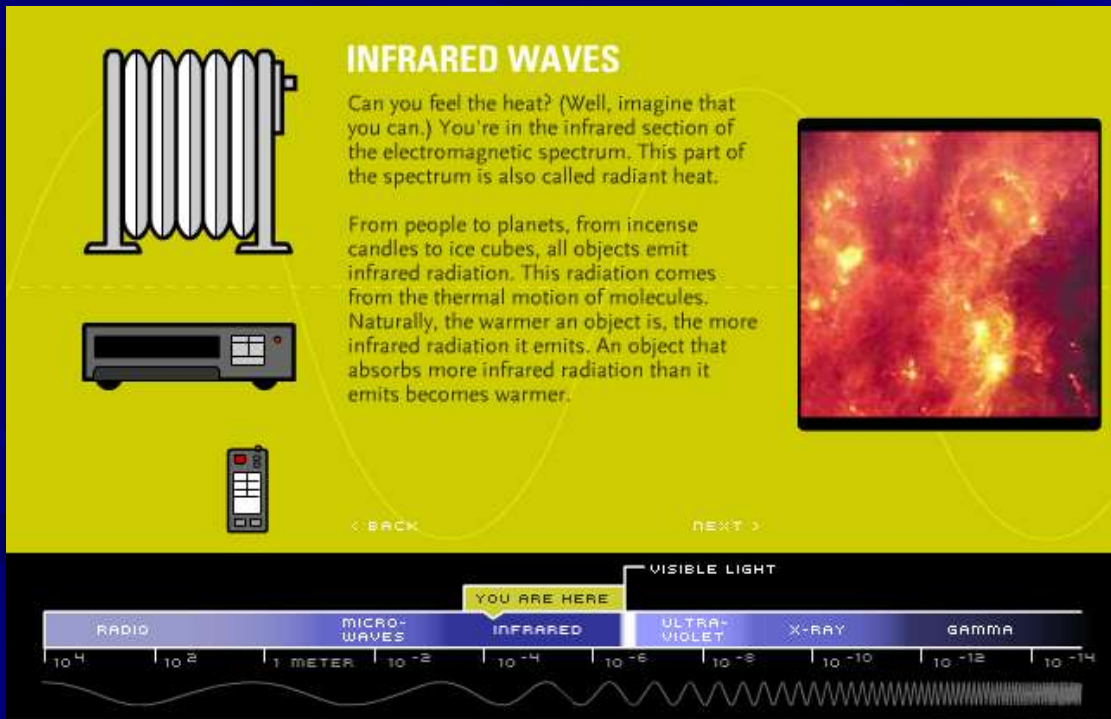


# Electromagnetic Spectrum

Light, heat, radio signals, and medical X-rays are all forms of electromagnetic radiation—waves moving through space that are delivered by mass-less particles called **photons**.



The only thing that differentiates one type of electromagnetic radiation from any other is the **energy carried by its photons**.



Electromagnetic energy is created at the atomic level, as electrons release energy while switching from higher- to lower-energy orbits, or while freeing themselves from atomic bonds. This movement of electrons results from the need to maintain energy balance within the atom under the input of some form of external energy.

## Cells emit and absorb photons...

Photons are energy particles or waves of light in the electromagnetic spectrum. A bio-photon is a photon of light emitted from a biological system, and detected by biological probes as part of the general electromagnetic radiation of living biological cells.



Cells absorb photons and transform their energy into ATP (Adenosine Triphosphate), which is a form of energy that cells utilize. The resulting ATP is then used to power metabolic processes and to synthesize DNA and RNA (proteins & enzymes.) ATP is needed to repair and regenerate cellular components, foster an abundance of cell reproduction, and increase circulation thus restoring balance to the body.

**Quantum biology-based energy medicine**, including LED light therapy, low level laser therapy (LLLT), ultrasound resonance therapy, and pulsed electromagnetic frequency (PEMF) therapy, are all safe, effective, non-invasive modalities being used to restore cellular energy and functioning.

# The Earth's Electro-Magnetic Field is Weakening

Over the last 165 years, scientists have measured the Earth's magnetic field and have recorded a decline of its' strength.

Today the magnetic field of the Earth is measured at 0.5 gauss. It is estimated that the field of the Earth 4,000 years ago was 5.0 gauss.

*That is a decrease of 90%!*

In addition, the **Earth's natural magnetic signal is often distorted by our modern way of living**. The power grid, electrical appliances, mobile phone's, mobile phone towers, Satellite signals, TV broadcast stations, tall buildings, asphalt, draining pipes and more are responsible for us not getting the signals we have evolved to. The immune system suffers because of this.



# Electro-Magnetism: The 5<sup>th</sup> Element

Most people know we need food (earth), water (water) and oxygen (air) to survive.

And many people also know they need full spectrum sunlight (fire) or you get what is referred to as SAD (seasonal affective disorder).

That makes FOUR critical elements:

**EARTH/FOOD**



**WATER**



**FIRE/SUNLIGHT**

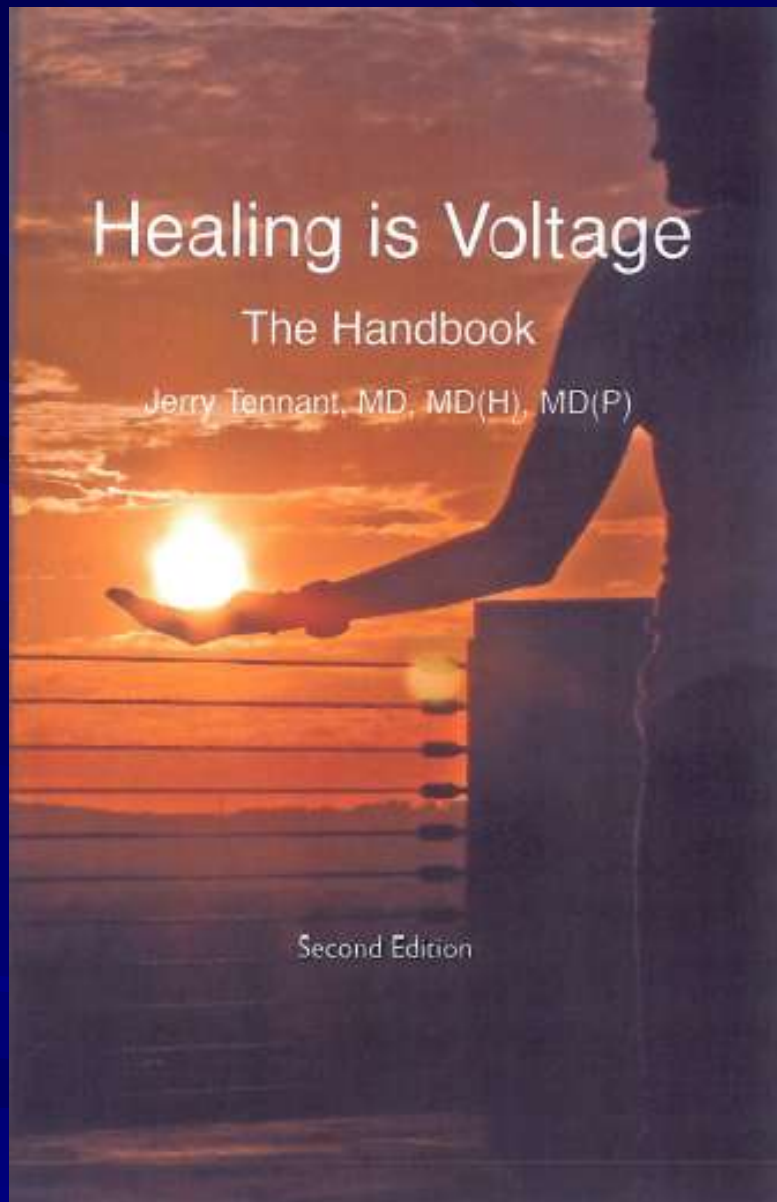


**AIR/OXYGEN**



However, every organism on earth (that includes people) has evolved under the influence of natural electro-magnetic signals of the earth, and that part of the solar radiation that is able to penetrate our atmosphere.

We have learned that these PEMF signals are of great importance to internal regulation of every organism.



## **Healing is Voltage – The Handbook**

**Every cell in the body is designed to run at -20 to -25 millivolts.**

**To heal, we must make new cells. To make a new cell requires -50 millivolts.**

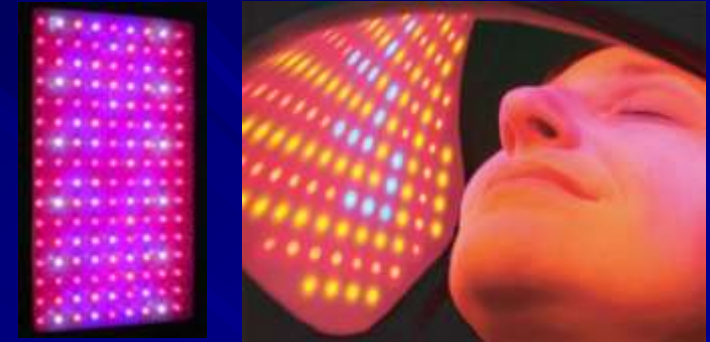
**Chronic disease occurs when voltage drops below -20 and/or you cannot achieve -50 millivolts to make new cells.**

**Thus chronic disease is always defined by having low voltage.**

**This book tells you how to measure your voltage in each organ, how to correct it, and how to determine why your voltage dropped enough to allow you to get sick.**

# NASA Space Technology Shines Light on Healing

Doctors at the Medical College of Wisconsin in Milwaukee have discovered the healing power of light with the help of technology developed for NASA's Space Shuttle. Using powerful light-emitting diodes, or LEDs, originally designed for commercial plant growth research in space, scientists have found a way to help patients here on Earth.



This LED technology developed by NASA has been scientifically proven by many recent clinical trials to re-regulate cellular function in the treatment of many common conditions, restoring the body's natural ability to heal itself.

Contrasted to many widely accepted therapies where vital tissue is intentionally damaged to create a healing response, using LED light to "re-energize" cellular function in a non-invasive manner allows the body to maintain vitality as nature intended.

"LED reacts with cytochromes in the body," explains Dr. Harry Whelan, professor of pediatric neurology and director of hyperbaric medicine at the Medical College of Wisconsin. "Cytochromes are the parts of cells that respond to light and color. When cytochromes are activated, their energy levels go up, and that stimulates tissue growth and regeneration."



International Journal of Photoenergy  
Volume 2012 (2012), Article ID 374861, 7 pages

## **Review Article: Photobiomodulation Process**

Yang-Yi Xu,<sup>1,2</sup> Timon Cheng-Yi Liu,<sup>1</sup> and Lei Cheng<sup>1</sup>

### **Abstract**

**Photobiomodulation (PBM) is a modulation of laser irradiation, monochromatic light, hot color light such as red, orange or yellow, or cold color light such as green, blue or violet (LI) on biosystems.**

Since its introduction in the early 1960s, laser has transformed phototherapy on biosystems. There is little research on PBM dynamics although its phenomena and mechanism have been widely studied. The PBM was discussed from dynamic viewpoint in this paper.

It was found that the primary process of cellular PBM might be the key process of cellular PBM so that the transition rate of cellular molecules can be extended to discuss the dose relationship of PBM.

There may be a dose zone in which low intensity LI (LIL at different doses) has biological effects similar to each other, so that biological information model of PBM might hold. LIL may self-adaptively modulate a chronic stress until it becomes successful.

# The Power of LIGHT Color Therapy.



**"When I first heard of this 'home remedy' it sounded absurd. But then I saw what it could do for arthritis, high blood pressure, migraines, prostate enlargement, and more."**

A handwritten signature in black ink, appearing to read 'R. Rowen'.

Robert Jay Rowen, MD  
Editor-in-Chief, *Second Opinion*

I've long been an advocate of the cleansing effects of infrared light. It's penetrating frequency delivers heat deep inside the body, improving circulation and aiding in detoxification.

Our bodies consist of tiny electro-magnetic particles that vibrate. When color and light strike you, they influence that vibration... and, in turn, the way your body functions.

Different bands of the light spectrum produce different effects in the human body. Project a part of the spectrum (blue, for example) onto an ailing or distressed body area and the healing results can be astounding! Purple can bring great relief to asthma sufferers. Indigo helps heal burns, while banishing pain. Yellow and magenta are beneficial for heart ailments. Orange can halt digestive problems, including diarrhea. In fact...

***For almost every illness, there is a corresponding color that can heal!***



# Laser light - a new, non invasive treatment for Erectile Dysfunction: a placebo-controlled, single blinded pilot study

Y. Yacobi M.D., A. Sidi M.D.

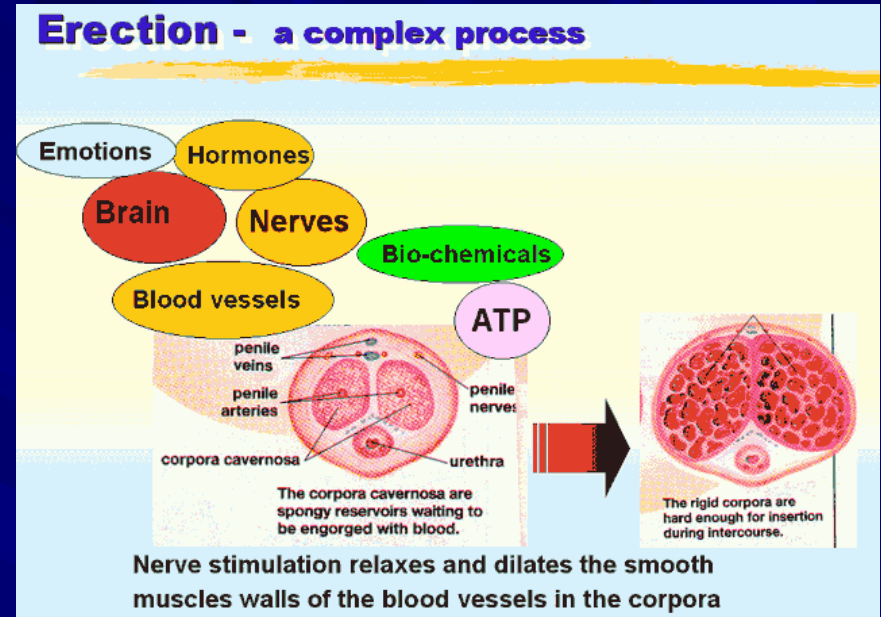
Department of Urologic Surgery,

The Wolfson Medical Center, Holon, Israel

In vitro and animal studies have shown that the application of laser light may induce vasorelaxation, which is the event that produces penile erection. The hypothesis was that application of laser light to the vascular bed of the penis might restore erectile function.

To prove this hypothesis, a specifically designed device, emitting laser light, was externally applied to the penis of patients with erectile dysfunction (ED). This study has been conducted to prove the efficacy and safety of laser therapy for the treatment of ED.

The treatment performed by the laser parameters used in this study has showed improvement in ED. The improvement duration in average was of 6 month. Further studies are needed for optimization of treating parameters: wavelength, dose and sessions.



# Therapeutic Photobiomodulation: Nitric Oxide and a Novel Function of Mitochondrial Cytochrome C Oxidase

Robert O. Poyton, Kerri A. Ball

Institution: Department of Molecular, Cellular, and Developmental Biology,  
University of Colorado. Published on February 20, 2011



Currently, light therapies are widely used in both human and veterinarian medicine. The application of light to clinical therapeutics includes:

- Photodynamic therapy, used to kill cancer cells;
- UVA therapies, used to treat a variety of skin diseases; and
- Photobiomodulation, used to promote cell growth and recovery from injury.

Photobiomodulation uses light emitting diodes (LEDs) or low energy lasers, which emit light in the visible red to near infrared range.

Three recent findings provide important new insights... First, nitric oxide has been implicated. Second, **cytochrome c oxidase**, an enzyme known to reduce oxygen to water at the end of the mitochondrial respiratory chain, has been shown to have a **new enzymatic activity -- the reduction of nitrite to nitric oxide.**

This nitrite reductase activity is elevated under hypoxic conditions but also occurs under normoxia. And third, **low intensity light enhances nitric oxide synthesis by cytochrome c oxidase without altering its ability to reduce oxygen.**

# **Effect of NASA light-emitting diode (LED) irradiation on wound healing**

*Harry T. Whelan, Robert L. Smits, Jr., Ellen V. Buchmann, Noel T. Whelan, et al.*

**Two approaches that specifically address the identified pathophysiological processes involved in wound healing are hyperbaric oxygen therapy and light therapy.**

**We believe that the use of NASA Light-Emitting Diodes (LED) for light therapy alone, and in conjunction with hyperbaric oxygen, will greatly enhance the natural wound healing process. This will save valuable time and resources for both patients and health care facilities.**

**Furthermore, improved wound healing will reduce the risk of infection for the patient, decrease the amount of costly dressings required, and more quickly return the patient to a pre-injury/illness level of activity.**

**Wound healing has three phases: first a substrate is laid down, then cells proliferate, and finally there is remodeling of tissue. It has been demonstrated that mitochondria are receptive to monochromatic near-infrared light and that laser light likely increases respiratory metabolism of certain cells. Processes such as fibroblast proliferation, attachment and synthesis of collagen and procollagen, growth factor production [including keratinocyte growth factor (KGF), transforming growth factor (TGF) and platelet-derived growth factor (PDGF)], macrophage stimulation, lymphocyte stimulation and greater rate of extracellular matrix production have been reported with laser light treatment.**

# Mitochondrial signal transduction in accelerated wound and retinal healing by near-infrared light therapy

Janis T. Eellsa, Margaret T.T. Wong-Rileyb, James VerHoevec, et al.

Mitochondrion. Volume 4, Issues 5–6, September 2004, Pages 559–567



Photobiomodulation by light in the red to near infrared range (630–1000 nm) using low energy lasers or light-emitting diode (LED) arrays has been shown to accelerate wound healing, improve recovery from ischemic injury in the heart, and attenuate degeneration in the injured optic nerve.

Recent evidence indicates that the therapeutic effects of red to near infrared light result, in part, from intracellular signaling mechanisms triggered by the interaction of NIR light with the mitochondrial photoacceptor molecule cytochrome c oxidase.

We have demonstrated that NIR-LED photo-irradiation increases the production of cytochrome oxidase in cultured primary neurons and reverses the reduction of cytochrome oxidase activity produced by metabolic inhibitors.

Gene discovery studies conducted using microarray technology documented a significant upregulation of gene expression in pathways involved in mitochondrial energy production and antioxidant cellular protection. These findings provide a link between the actions of red to near infrared light on mitochondrial oxidative metabolism in vitro and cell injury in vivo. NIR-LED photobiomodulation represents an innovative and non-invasive therapeutic approach for the treatment of tissue injury and disease processes in which mitochondrial dysfunction is postulated to play a role including diabetic retinopathy, age-related macular degeneration, Leber's hereditary optic neuropathy and Parkinson's disease.

Journal of Neurotrauma. November 2010, 27(11): 2107-2119.

## **Near Infrared Light Reduces Oxidative Stress and Preserves function in CNS Tissue Vulnerable to Secondary Degeneration following Partial Transection of the Optic Nerve**

Melinda Fitzgerald, Carole A. Bartlett, Sophie C. Payne, Nathan S. Hart, Jenny Rodger, Alan R. Harvey, and Sarah A. Dunlop.

Traumatic injury to the central nervous system (CNS) is accompanied by the spreading damage of secondary degeneration, resulting in further loss of neurons and function. Partial transection of the optic nerve (ON) has been used as a model of secondary degeneration, in which axons of retinal ganglion cells in the ventral ON are spared from initial dorsal injury, but are vulnerable to secondary degeneration.

We have recently demonstrated that early after partial ON injury, oxidative stress spreads through the ventral ON vulnerable to secondary degeneration via astrocytes, and persists in the nerve in aggregates of cellular debris. In this study, **we show that diffuse transcranial irradiation of the injury site with far red to near infrared (NIR) light** (WARP 10 LED array, center wavelength 670 nm, irradiance 252 W/m<sup>-2</sup>, 30 min exposure), as opposed to perception of light at this wavelength, **reduced oxidative stress in areas of the ON vulnerable to secondary degeneration following partial injury.**

The WARP 10 NIR light treatment also prevented increases in NG-2-immunopositive oligodendrocyte precursor cells (OPCs) that occurred in ventral ON as a result of partial ON transection. Importantly, normal visual function was restored by NIR light treatment with the WARP 10 LED array, as assessed using optokinetic nystagmus and the Y-maze pattern discrimination task. To our knowledge, this is the first demonstration that 670-nm NIR light can reduce oxidative stress and improve function in the CNS following traumatic injury *in vivo*.

## Visible light-induced killing of bacteria as a function of wavelength: Implication for wound healing

Anat Lipovsky MSc, Yeshayahu Nitzan PhD, Aharon Gedanken PhD, Dr. Rachel Lubart PhD



Visible light (400–800 nm) at high intensity was previously found to kill bacteria that are frequently found in infected wounds, while low-power white light enhances bacterial proliferation. **The phototoxic effect was found to involve induction of reactive oxygen species (ROS) production by the bacteria.** The aim of the present study was to identify the most effective wavelengths in the visible range for inducing a bactericidal effect.

ROS production in *Staphylococcus aureus* and *Escherichia coli* as a function of wavelengths in the visible range (400–500, 500–800, 415, and 455 nm) was studied using the electron paramagnetic resonance (EPR) spin trapping technique.

**ROS production following blue (400–500 nm) light illumination was found to be higher than that of red (500–800 nm). Within the blue range, light of 415 nm induced more ROS than 455 nm, which correlated with results obtained for the reduction in colony count of *S. aureus* and *E. coli* following illumination using equal intensities of these two wavelengths. At low fluencies, both 415 and 455 nm enhanced proliferation of *S. aureus* but reduced viability of *E. coli*.**

Intense blue light, preferably at 415 nm, could be used for bacterial eradication. However, it should be noted that low intensity of visible light can be dangerous since it may promote proliferation of the microorganisms.

Photomed Laser Surg. 2010 Apr;28(2):159-60. doi: 10.1089/pho.2010.2789.

## **Mitochondrial mechanisms of photobiomodulation in context of new data about multiple roles of ATP**

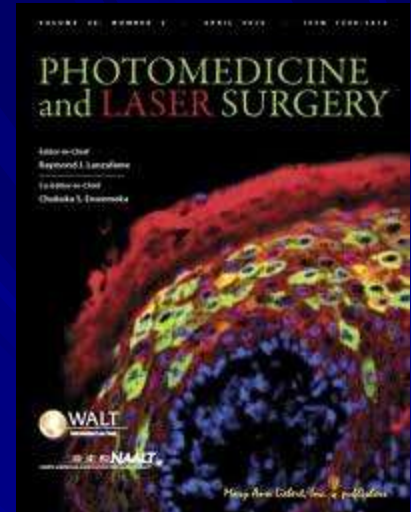
Karu T.

Various cellular responses to visible and IR-A radiation have been studied for decades in the context of molecular mechanisms of laser phototherapy, also called photobiomodulation, low-level light therapy (LLLT).

LLLT uses monochromatic and quasimonochromatic light in the optical region of \*600–1,000nm to treat in a nondestructive and nonthermal fashion various soft-tissue and neurologic conditions. **This modality also was recently used to reverse toxic effects of neurotoxins, to treat strokes and acute myocardial infarction, and to stimulate stem cell proliferation.**

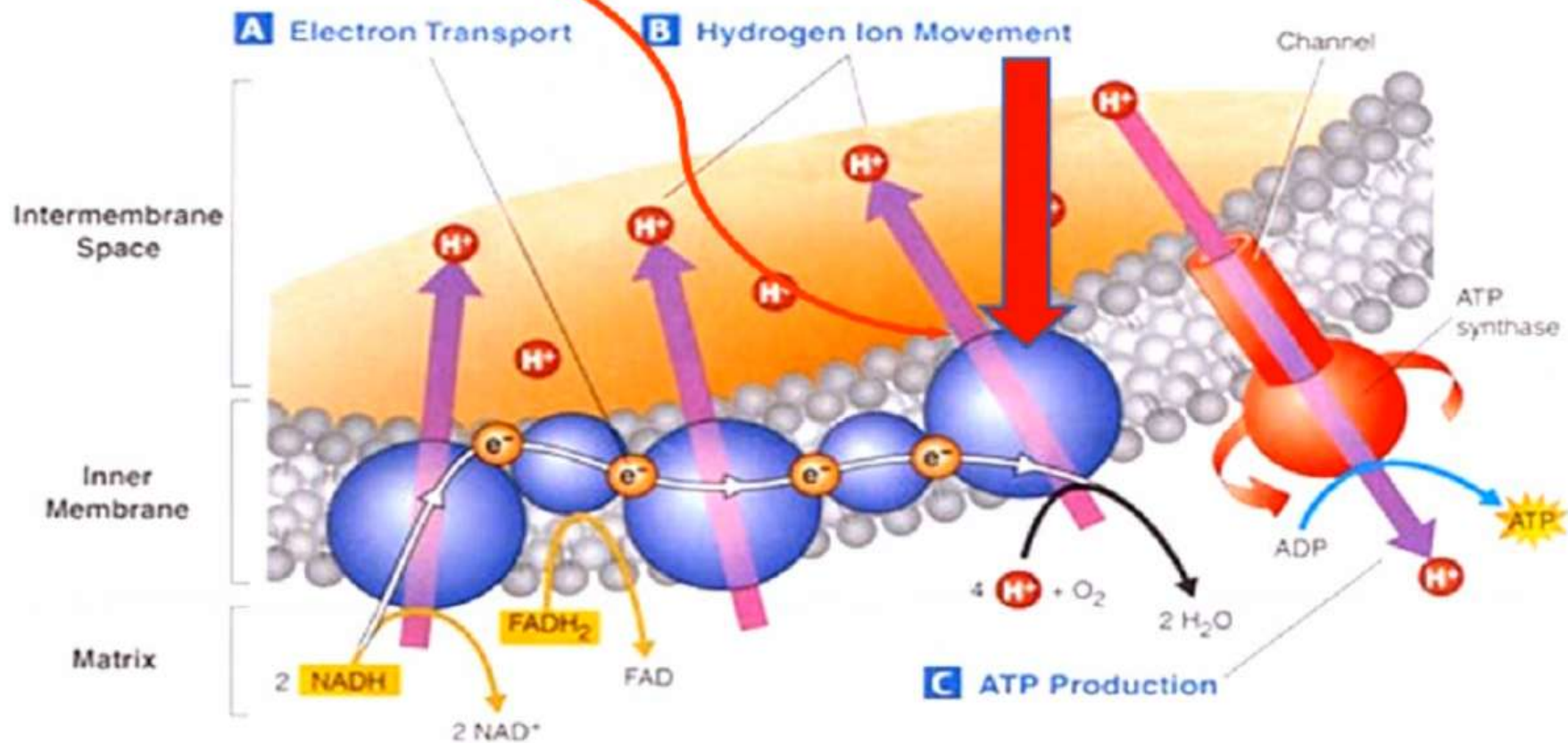
It is generally accepted that the mitochondria are the initial site of light action in cells, and cytochrome c oxidase (the terminal enzyme of the mitochondrial respiratory chain) is the responsible molecule.

This multiplicity of conditions treated with photobiomodulation has persuaded many unbelievers of the value of such an universal method.



# Light Activation on Mitochondria producing ATP

LIGHT (PHOTONS)





## Low Level Laser Therapy (LLLT)

Low level laser therapy (LLLT), also called "cold laser therapy" and "low-power laser therapy" (LPLT) is a light source treatment that generates a coherent light of a single wavelength.

LLLT uses red-beam or near-infrared lasers with a wavelength between 600 and 1,000 nanometers (nm) and from 5 to 500 milliwatts.

LLLT emits no heat, sound, or vibration. Instead of producing a thermal effect, LLLT acts by photochemical reactions in the cells (bio-stimulation).

There are 2 kinds of LLLT devices:

1. Point Lasers – with a treatment area of approximately 0.5 cm<sup>2</sup>.

2. Clusters (shower type lasers) with *generally* three to eight 8 diodes covering larger areas, irradiating an area of 0.5 cm<sup>2</sup> times the number of laser diodes

# Low Level Laser Energy

When our body absorbs the laser beam, a number of simultaneous chain reactions occur: blood flow invigoration, cell activity excitation, and intensification of inter-cell communication



Influences the permeability of cell membranes, the penetration of passage of the ions  $Ca^{++}$ ,  $Na^{+}$ ,  $K^{+}$ , and causes increased nerve activity

Increases ATP (adenosene triphosphate) levels, activates and stimulates enzymes in the target cells and cAMP molecules which carry inter-cell signals



Increases the synthesis of endorphins - hormones that relieve pain.

Increases S.O.D. (super oxide dismutase) which fights inflammation and reduces damage from free radicals

Activates immunization chain reactions; macrophage and mast cells that help in wound healing

Accelerates synthesis of collagen, elastin and keratinocytes – main components of the epidermis



Reduction in pain level

Anti-inflammatory activity

Faster wound healing and reduced scarring

Skin rejuventaing, anti-aging and wrinkle reduction



## **Simul-Care II** *For Use by Physicians*

- **electro-stim**
- **vibrational**
- **microcurrent**
- **therapeutic heat**
- **red light**
- **magnetic**
- **infrared light**

**A portable, lightweight, rechargeable controller with an attached regular size, flexible pad that produces battery-charged therapy consisting of the following:**

- **32 red lights**
- **24 infrared lights**
- **E-stim/micro current**
- **4 Permanent Magnets**
- **Vibratory massage.**

**These therapies interact simultaneously, using either E-stim/micro current. The pad is lightweight and very flexible with a hand strap for attended application, while the unit itself weighs less than 1 1/2 pounds.**





ERCHONIA®

Laser Healthcare™



## 3LT® Low Level Laser Therapy

### Neck and Shoulder Pain

A variety of low level lasers are proven to be effective in reducing and eliminating acute and chronic pain in the neck & shoulders. Many patients find that this solution is a much more effective and immediate alternative to traditional pain medications.

### Body Contouring

Erchonia lasers are proven to target and eliminate fat in areas that are difficult to target with regular diet and exercise. The Zerona laser is proven to target these difficult areas and biostimulate the body on the cellular level.

### Acne

Currently, there are many acne treatments available in the form of pills, lotions, tonics, chemicals, and more, but Erchonia has developed a new solution with DERMALASER. This FDA market cleared laser targets the actual type of bacteria that is responsible for causing acne, rather than targeting the skin.

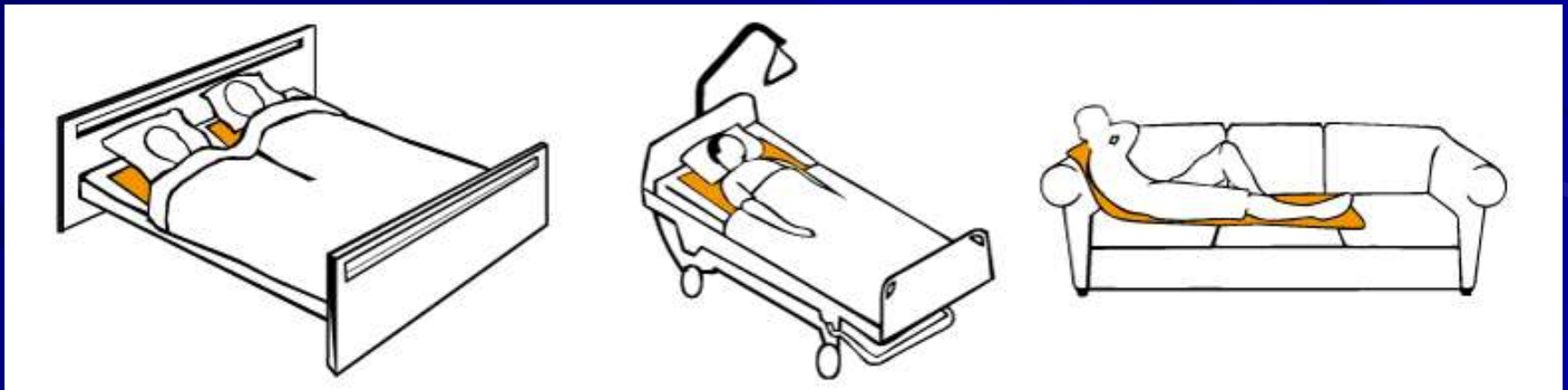
**BEMER** research has over many years achieved leading-edge results in terms of the biorhythm of local and external regulation flows in microcirculation.



The core of BEMER technology is a multi-dimensional signal structure, which effectively stimulates restricted or defective microcirculation. Consequently, it supports one of the most important regulation mechanisms in the human body for prevention, healing, recovery and regenerative processes.



Module for all-over body application can simply be placed on the couch or an armchair. Fixing strap can also be used to attach to bed when using sleep program.



# B-CURE™ LASER



- Pain Reduction
- Anti-Inflammation
- Rapid Wound Healing
- Skin Rejuvenation



- ▶ Professional Laser Power
- ▶ High Efficiency within 4.5 cm<sup>2</sup>
- ▶ Proven Clinical Results
- ▶ Light, Portable & Rechargeable

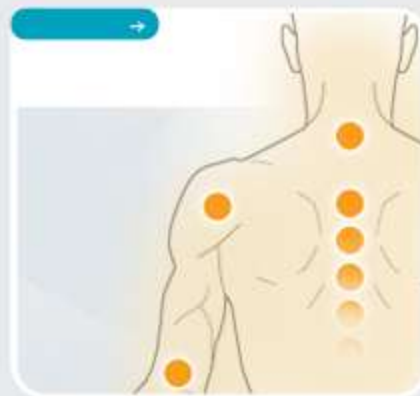
Pains & Injuries

Dermatology

Esthetics & Skin Rejuvenation

Acupuncture Treatment

## B-CURE LASER LLLT-808 - a breakthrough in soft laser therapy:



### The Power Of Healing In Your Hands

We are proud to present you with cutting edge technology in soft laser therapy: clinical soft laser power - in a light, portable, rechargeable and user friendly medical device, for the rapid, non-invasive and efficient treatment of pain, wounds, burns, sports injuries, inflammation, acne, and skin rejuvenation. It is the first portable soft laser device in the world with the healing power equal to that of a full-sized, stationary, expensive soft-laser machines used only in hospitals and prestigious care facilities.

[more details](#)

**B-CURE LASER** allows treating pain at home and saves visits to the physician.



Almost everyone begins treatment skeptical, but all end up with a smile!

The B-CURE LASER is a soft laser meant for professional treatment of orthopedic problems, sport injuries, inflammation, joint problems, diabetic sores, pressure sores and even veterinary treatments.

Using it for six to eight minutes each day generally helps reduce the amount of chemical medications needed, saves time, and does the work of several devices in one.

*“People can perform the treatment as often as needed, can treat themselves, and after we instruct them on exactly what to do, and what they are expected to feel, they are independent. I began using it to treat patients, and for some it was like a miracle, it changed their lives.”* ~ Dr. Hagai Amir, director of the Orthopedic Rehabilitation Department at Sheba Tel Hashomer Hospital, Israel.

## Healing of injuries from motorcycle accident

Without a doubt, the motorcycle accident was the harshest event ever experienced by Hagai, a young man who had his whole life ahead. Because he hadn't worn gloves, his hands were seriously injured, as were other parts of his body.



“... my right hand was completely opened,” he recalls. “I started the rehabilitation process, and one of my best friends, a regular user of the B-CURE LASER, visited after my accident and explained to me how to use it. I sat down, followed his instructions, and it was just amazing.”

I was surprised to see how tremendously successful it was. It was incredible how my hand healed, all the skin healed, as it did around my hip too. When I was young, I was often wounded, and the healing time was far longer and the process was more complex. I am so pleased that I came to know about this device. In my opinion, everyone needs to know about it.”





## **B-Cure Laser** for the Treatment of Sports Injuries, Pain and Inflammation

The B-Cure is used by soccer teams, such as the Maccabi Haifa and Maccabi Tel Aviv, Maccabi Haifa basketball team, the dancer and choreographer Ido Tadmor, and the Israeli National Gymnastic team.

Professional tennis player Julia Glushko, who says **“the B-Cure Laser is great, it helps me a lot for my constant back pain”**.

Mr. Pini Sharon, Physiotherapist, Maccabi Haifa Sports Club: **“B-Cure Laser provides immediate relief for a wide variety of pain and it is very easy to use. The use of the laser device improves the level of pain immediately in cases of acute and chronic pain. The advantage of this device is that the player can take it home and treat himself.”**

Alon Harazi, Maccabi Haifa Football Player: **“The device treated both fresh and old wounds exceptionally. Today I do not go on the field without using it. I highly recommend it for every athlete, and anyone who suffers from any type of pain.”**



## More B-Cure Laser TESTIMONIALS – doctors and patients

The gymnasts daily use of B-Cure Laser LLLT 808 device substantially decreased the pain without the use of pain killers. Decreasing the pain also enabled greater maintenance of flexibility and increased level of concentration in the exercises. I thank you on behalf of the girls on the team and recommend the use of B-Cure Laser wholeheartedly.

Sincerely,

Ira Vigdorichik

Coach of the Israeli Women's Rhythmic  
Gymnastics Team

Beijing 2008 Olympic Games



My name is Michael Zilber and I suffer from joint aches, as well as gum and teeth ache. After a treatment of about **three months** using the B-Cure Laser device, with plenty of patience, the pain in the arm wrists that lasted several years decreased by 80%-90%. Amazing!! In addition, the **teeth and gum aches disappeared after two treatments only** with the device and the healing time of a burn I suffered from shortened significantly after using the device. In conclusion: **this is a very simple, domestic device that works wonderfully.**

Thank you, Michael

View more testimonials here: [http://www.gd-energies.com/index.php?page\\_id=90](http://www.gd-energies.com/index.php?page_id=90)

# **The Role of Nitric Oxide in Low Level Light Therapy (LLLT)**

**Hamblin MR**

Wellman Center for Photomedicine, Massachusetts General Hospital, Department of Dermatology,  
Harvard Medical School, Harvard-MIT Division of Health Sciences and Technology

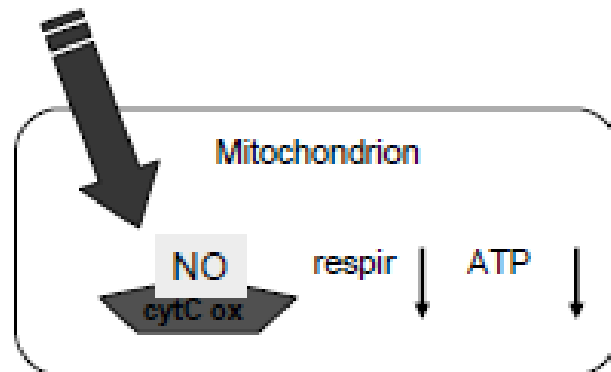
**The use of low levels of visible or near infrared light for reducing pain, inflammation and edema, promoting healing of wounds, deeper tissues and nerves, and preventing tissue damage by reducing cellular apoptosis has been known for almost forty years since the invention of lasers.**

**Red and near-IR light is primarily absorbed by cytochrome c oxidase (unit four in the mitochondrial respiratory chain). Nitric oxide produced in the mitochondria can inhibit respiration by binding to cytochrome c oxidase and competitively displacing oxygen, especially in stressed or hypoxic cells. If light absorption displaced the nitric oxide and thus allowed the cytochrome c oxidase to recover and cellular respiration to resume, this would explain many of the observations made in LLLT.**

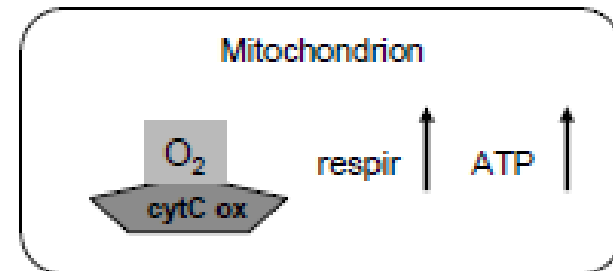
**Studies suggest that mitochondria are responsible for the cellular response to red visible and NIR light; Increased proton electrochemical potential and ATP synthesis, increased RNA and protein synthesis, increase in polarographically measured oxygen uptake, major stimulation in the proton pumping activity, increased oxygen consumption, increased phosphate potential, energy charge and enhanced activities of NADH: ubiquinone oxidoreductase, ubiquinol: ferricytochrome c oxidoreductase and ferrocyanochrome C: oxygen oxidoreductase.**

# Effect of red or near IR light on cellular respiration, oxygenation

Red or NIR light



NO



Explains why:

Normal cells and tissue generally do not respond

Hypoxic cells, damaged cells, and tissue at risk of death respond well

Effects continue for long time after light is switched off

Released nitric oxide temporarily increases blood flow in illuminated area

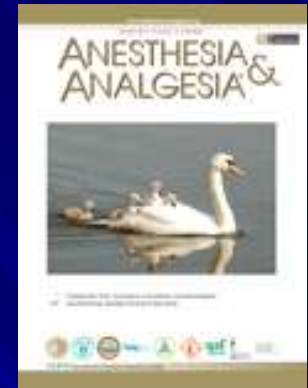
Released nitric oxide reduces swelling by dilating lymphatics and increasing drainage

Michael Hamblin, Ph.D., R.Rox Anderson, M.D., Wellman Center for Photomedicine,  
Massachusetts General Hospital, Boston, MA

*Anesth Analg. 2007 Feb;104(2):301-7*

## **Acupuncture Enhances Generation of Nitric Oxide and Increases Local Circulation**

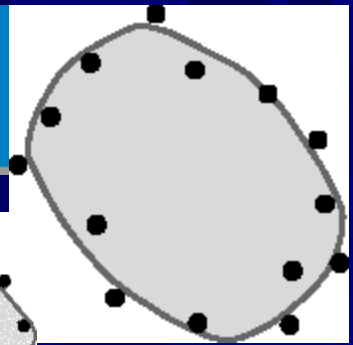
*Tsuchiya M, et al. Departments of Biochemistry, Osaka City University Medical School, Abeno-Ku, Japan.*



### **Abstract**

Although it is widely used, the mechanisms and effects of acupuncture on pain are not completely understood. **Recently, increased nitric oxide (NO) synthase activity has been found in meridians and acupoints.** Because NO is a key regulator of local circulation, and because change in circulation can affect the development and persistence of pain, we propose that acupuncture might regulate NO levels.

NO concentration in the plasma from the acupunctured arm was significantly increased by  $2.8 \pm 1.5$  micromol/L at 5 min and  $2.5 \pm 1.4$  micromol/L at 60 min after acupuncture. Blood flow in palmar subcutaneous tissue of the acupunctured arm also increased, and this correlated with the NO increase. These changes were not observed in noninvasive sham-acupunctured hands and forearms. In conclusion, acupuncture increases the NO level in treated regions and thereby increases local circulation. **These regulatory effects might contribute to pain relief provided by acupuncture.**



## Ultrasonic Visualization And Stimulation Of Classical Oriental Acupuncture Points

Joie P. Jones, PhD - Young K. Bae, PhD

Medical Acupuncture, Vol 15, #2

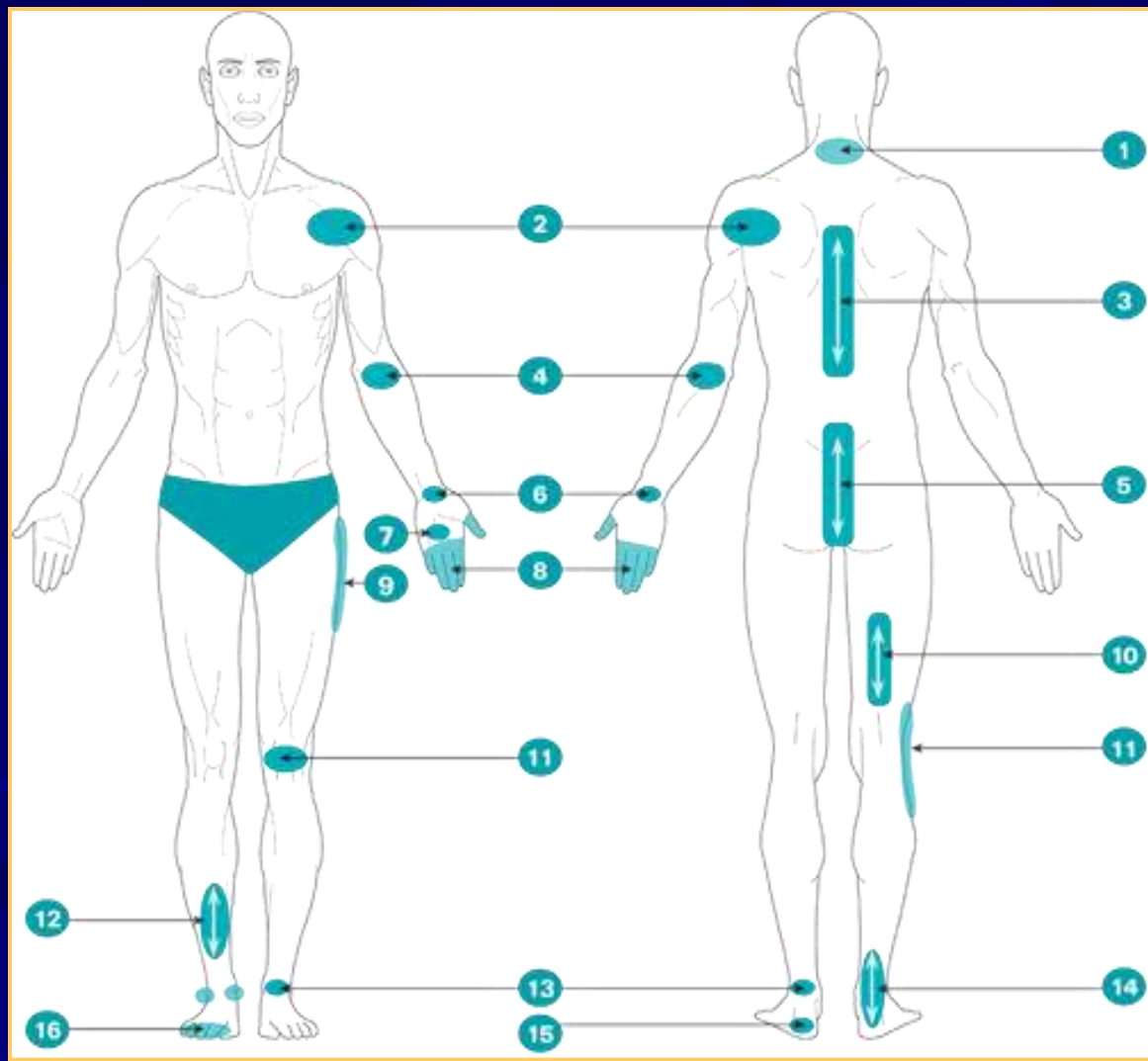
Acupuncture has long been a major component of Oriental medicine and considerable evidence supports that acupuncture is effective in the treatment of pain and various disorders.

Pulses of ultrasonic energy can stimulate an classical acupoints, eliciting a response similar to that produced by standard needling. **Ultrasonic stimulation of the acupoints offers many advantages over conventional methods (no pain or sensation or temperature rise during treatment)** and provides an extremely useful tool for the scientific study and quantitative evaluation of acupuncture.

In addition, quantitative ultrasound methods have shown that **acupoints represent regions of enhanced ultrasonic attenuation, which change in size, shape, and location over short periods of time.** Our study also suggests that an ultrasonic acupuncture system could be developed that would locate the acupoint (using quantitative ultrasound methods), and then stimulate the acupoint (using pulses of higher ultrasonic energy). **"Ultrasonic Acupuncture" would seem to combine the best of Oriental medicine with the best of Western technology for the improvement of health care.**

## Qi or Chi... According to the principles of traditional Chinese medicine

illness is caused when *qi* does not flow properly throughout the body. Acupuncturists determine whether *qi* is weak, stagnant or otherwise out of balance, which indicates the points to be stimulated.



Electroacupuncture is useful for conditions in which there is an accumulation of *qi*, such as in **chronic pain conditions**, or in cases where the *qi* is difficult to stimulate.

One advantage of electroacupuncture is that a practitioner does not have to be as precise with the insertion of needles. This is because the current delivered through the needle stimulates a larger area than the needle itself. The advantage of this procedure is that it can be used by people who have a fear of needles or a condition that prohibits them from being needed.

# **ProloGel** Revolutionary topical pain relief formula works instantly, with or without ultrasound!

Developed by Howard Rosen, M.D, a board-certified, practicing doctor of pain management.

In his years of administering prolotherapy treatments he had found that while effective, patients shied away from the injections. After extensive research, Dr. Rosen created a solution that could effectively penetrate to the subcutaneous layer, with or without the aid of ultrasound. He began testing his formula on patients with great success – patients routinely reported significant or full pain relief.

During his research, Dr. Rosen documented ProloGel treatment results in fifty patients whose pain problems included upper back, lower back, failed low back surgery, neck, wrist, elbow, hand, knee, leg, shoulder, and ankle pain. **Based on a scale of 1-10, where 10 is the worst pain imaginable, the average pain score for the fifty patients fell from 7.1 down to 2.3 – after only one treatment.**

Over 75 percent of the patients found significant pain relief (defined as 50 percent or greater pain relief) after just the first treatment.





## **Wrist Ganglion Cyst Reduction with Topical Prolotherapy Solution and Ultrasound** - *Howard Rosen, M.D. and Sheri Rosen, medical student*

68 year-old female with a chief complaint of a painful wrist. She presented with a large painful volar surface ganglion. 60 hours later an emergency room physician had drained the ganglion. It had re-accumulated. Accordingly, to the patient the ganglion was the same size or possibly bigger than her original ganglion presentation.



1.5 days after aspiration  
Re-aspiration



After 15 minutes of prolophoresis



5 days after aspiration and  
prolophoresis 5 days



4 months later...Still not reformed.

- The ganglion was “rock hard” and painful to palpation. She had the ganglion drained 1.5 days earlier by an emergency room doctor. She stated the ganglion was larger than ever and it was hard for her to use this wrist. Surgery was only option she was offered.
- The ganglion was then drained (See photo), and treated with 15 mins of prolophoresis.
- The patient was instructed to return in 2 days if the ganglion reformed. She was instructed to return in 5 days if it did not reform. She returned in 5 days. The ganglion was flatter and smaller than even after the drainage. She no longer had pain.
- She returned 4 months later and her ganglion was still markedly reduced (See photo). It was still not painful. She stated the best treatment she received was the prolophoresis and the aspiration combination.

## Natural Healing with Intranasal Light Therapy



Intranasal Light Therapy is a way to stimulate self healing and boost immunity by illuminating the blood capillaries through the nasal cavity.



**Intranasal light therapy stimulates restoration of body balance (homeostasis).**

VieLight is a small light diode of certain specifications designed to be inserted into either nostril for 25 minutes per day. Homeostatic stimulation is achieved through the response of the mid-brain area, particularly the hypothalamus being in close proximity to the nasal cavity, and the stimulation of redox signaling molecules and their subsequent distribution through the nasal capillaries and the circulatory system.

The facial area also responds directly to the light, often resulting in the immediate treatment of sinusitis, congestion, headache and, facial and pain in the neck area.

# Intranasal Low Intensity Laser Therapy (ILILT) blood purifying effects



ILILT



blood circulation and effects to whole body's blood



## ILILT's Biostimulatory effects to blood

1. Increased ATP production by the mitochondria and increased oxygen consumption on the cellular level, which may result in muscle relaxation
2. Increased serotonin and increased endorphins
3. Increased anti-inflammatory effects through reduced prostaglandin synthesis
4. Improved blood circulation to the skin in cases like neuralgia and diabetes mellitus
5. Decreases permeability of the membrane of the nerve cells for Na/K causing hyperpolarisation
6. Increased lymphatic flow and decreased edema

## Adjuvant therapy

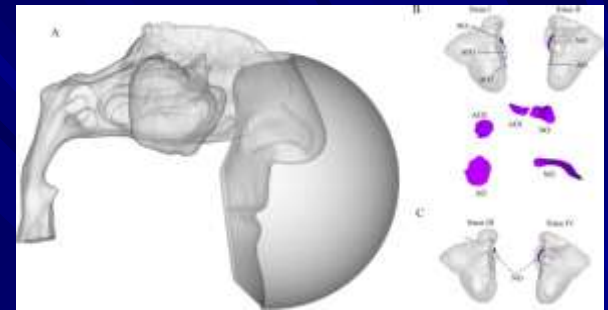
## Health care

- **Hypertension** <<Learn more
- **Hyperlipoidemia** <<Learn more
- **Hyperviscosity** <<Learn more
- **Stroke** <<Learn more
- **Sugar diabetes** << Learn more
- **Insomnia** << Learn more
- Blood health care
- Improve natural immunity
- Anti-ageing
- protect the ischemic anemia

## Nitric oxide and the paranasal sinuses.

Lundberg JO.

Karolinska Institutet, Department of Physiology and Pharmacology, Stockholm, Sweden. Jon.Lundberg@ki.se



### Abstract

The discovery within the paranasal sinuses for the production of nitric oxide (NO) has altered the traditional explanations of sinus physiology... healthy paranasal sinus epithelium expresses an inducible NO synthase that continuously generates large amounts of NO, a pluripotent gaseous messenger with potent vasodilating, and antimicrobial activity.

This NO can be measured noninvasively in nasally exhaled breath. The role of NO in the sinuses is likely to enhance local host defense mechanisms via direct inhibition of pathogen growth and stimulation of mucociliary activity. The NO concentration in a healthy sinus exceeds those that are needed for antibacterial effects in vitro. In patients with primary ciliary dyskinesia (PCD) and in cystic fibrosis, nasal NO is extremely low. This defect NO generation likely contributes to the great susceptibility to chronic sinusitis in these patients. In addition, the low-nasal NO is of diagnostic value especially in PCD, where nasal NO is very low or absent. Intriguingly, NO gas from the nose and sinuses is inhaled with every breath and reaches the lungs in a more diluted form to enhance pulmonary oxygen uptake via local vasodilation. In this sense NO may be regarded as an "aerocrine" hormone that is produced in the nose and sinuses and transported to a distal site of action with every inhalation.

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# Ask Your Doctor About: Pulsed Electromagnetic Field Therapy



Pulsed electromagnetic field therapy is a new approach to pain management that uses magnets to create pulsing, moving energy. These energy waves could change the way your body copes with pain. Learn more about this new treatment. Could it work for you?

Like 2k Send



**Dr. William Pawluk, MD, MSc, appeared as PEMF Specialist on the Doctor Oz TV Show in November 2011, where they discussed the most effective types of pulsed electromagnetic field therapy.**

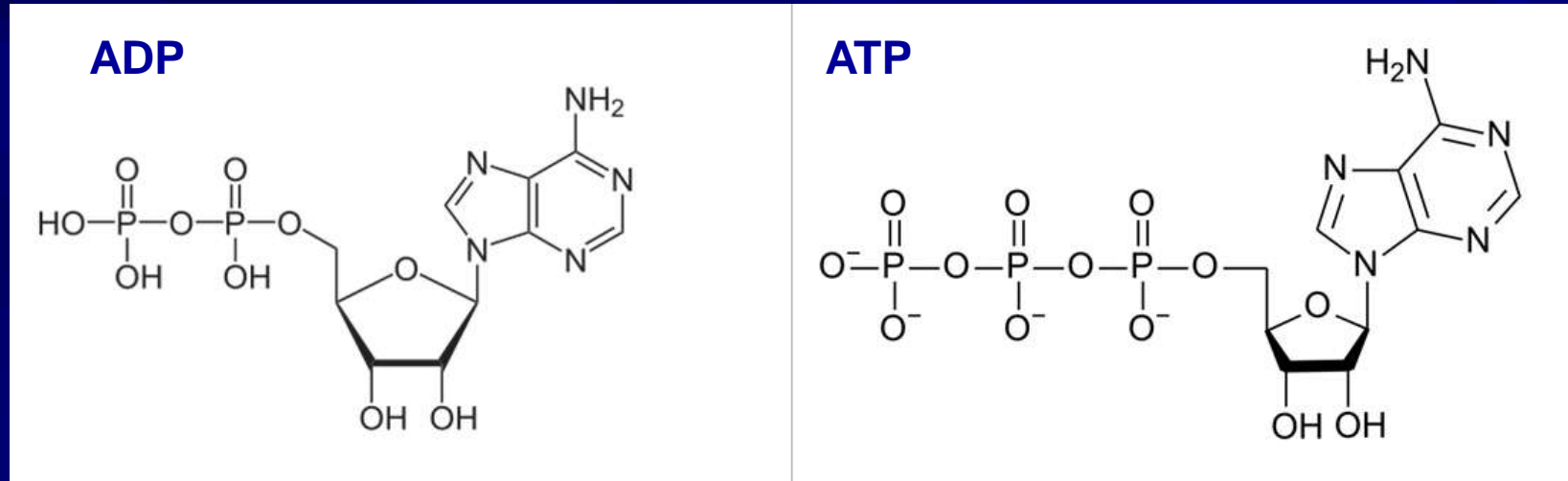
<http://www.drpawluk.com/doctor-oz-article-on-pemfs/>  
<http://www.doctoroz.com/videos/ask-your-doctor-about-pulsed-electromagnetic-field-therapy>



# PEMF Therapy Increases Energy Storage and Cellular Activity

At the sub-atomic level, as the pulsed fields expand and collapse through a tissue, the protein molecules, such as the cytochromes in the cells' mitochondria, gain electrons and, in doing so, store energy.

The average total energy transmitted to the tissues does not create heat within the cells, nor cause the cells' atoms to vibrate much causing a thermal increase, nor cause an electron to jump to a higher orbit and emit heat as it returns to its orbit of origin.



There is only sufficient average energy for the electron-spin to be increased, thus, energy gets stored in the cells' mitochondria by converting ADP (Adenosine Di-Phosphate) to ATP molecules more rapidly by the addition of the phosphate radical to the ADP.

Exp Mol Med. 2002 Mar 31;34(1):53-9.

## **Enhanced expression of neuronal nitric oxide synthase and phospholipase C-gamma1 in regenerating murine neuronal cells by pulsed electromagnetic field.**

Kim SS, Shin HJ, Eom DW, Huh JR, Woo Y, Kim H, Ryu SH, Suh PG, Kim MJ, Kim JY, Koo TW, Cho YH, Chung SM.  
Department of Pathology, Ulsan University College of Medicine, Korea.



### **Abstract**

**Pulsed electromagnetic field (PEMF) has been shown to improve the rate of peripheral nerve regeneration. In the present study we investigated the expression of neuronal nitric oxide synthase (nNOS) and phospholipase C-gamma1 (PLC-gamma1) in regenerating rat laryngeal nerves during the exposure to PEMF after surgical transection and reanastomosis.**

**Axons were found to regenerate into the distal stump nearly twice faster in PEMF-exposed animals than in the control. Consistently, motor function was better recovered in PEMF-treated rats. The expression of nNOS and PLC-gamma1 was highly enhanced in the regenerated nerves.**



Nitric Oxide. 2002 Aug;7(1):18-23.

## **Nitric oxide mediates the effects of pulsed electro magnetic field stimulation on the osteoblast proliferation and differentiation.**

Diniz P, Soejima K, Ito G.

Department of Orthodontics, Kagoshima University Dental School, 8-35-1 Sakuragaoka, Kagoshima 890-8544, Japan.

### **Abstract**

The purpose of this research was to investigate whether the effects of pulsed electro-magnetic field (PEMF) stimulation on the osteoblast proliferation and differentiation are mediated by the increase in the nitric oxide (NO, nitrogen monoxide) synthesis.

PEMF stimulation increased significantly the nitrite concentration in the -NMMA group on the 3rd, 7th, and 15th days of culture. However, this effect was partially blocked in the +NMMA group. The DNA content in the -NMMA group, but not in the +NMMA group, increased significantly on the 3rd and 7th days of culture. The ALPase activity in the P-NMMA and D-NMMA groups, but not in the P+NMMA and D+NMMA groups, also increased significantly.

In conclusion, the **PEMF stimulatory effects on the osteoblasts proliferation and differentiation were mediated by the increase in the NO synthesis.**

Copyright 2002 Elsevier Science (USA)

PMID:12175815



<http://www.ncbi.nlm.nih.gov/pubmed/12175815>

## **Non-invasive electromagnetic field therapy produces rapid and substantial pain reduction in early knee osteoarthritis: a randomized double-blind pilot study.**

Nelson FR, Zvirbulis R, Pilla AA.

Department of Orthopaedic Surgery, Henry Ford Hospital, Detroit, MI, 48202, USA



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National Institutes of Health

This study examined whether a **non-thermal, non-invasive, pulsed electromagnetic field (PEMF)**, known to modulate the **calmodulin (CaM)-dependent nitric oxide (NO)/cyclic guanosine monophosphate (cGMP) signaling pathway**, could reduce pain in early knee OA. This randomized, placebo-controlled, double-blind pilot clinical study enrolled 34 patients. Patient selection required initial VAS  $\geq 4$ , 2 h of standing activity per day, and no recent interventions such as cortisone injections or surgery.

Results showed VAS pain score decreased in the active cohort by  $50 \pm 11$  % versus baseline starting at day 1 and persisting to day 42 ( $P < 0.001$ ). There was no significant decrease in VAS versus baseline at any time point in the sham cohort ( $P = 0.227$ ). The overall decrease in mean VAS score for the active cohort was nearly threefold that of the sham cohort ( $P < 0.001$ ). The **results suggest that non-thermal, non-invasive PEMF therapy can have a significant and rapid impact on pain from early knee OA** and that larger clinical trials are warranted.

Int J Radiat Biol. 2009 Aug;85(8):672-9.

## **Repetitive 50 Hz pulsed electromagnetic field ameliorates the diabetes-induced impairments in the relaxation response of rat thoracic aorta rings.**

Kavak S, Emre M, Meral I, Unlugenc H, Pelit A, Demirkazik A.

Department of Biophysics, Yuzuncu Yil University, Van, Turkey.

**Purpose:** To evaluate the characteristic features of mechanical responses and the membrane potential changes induced by repetitive pulsed electro-magnetic field (PEMF, 50 Hz, 5 mT) in thoracic aorta rings obtained from streptozotocin-induced diabetic and healthy control rats to determine if PEMF could ameliorate problems associated with diabetes.

Sixty male Wistar rats were randomly divided into two experimental groups, each containing 30 animals. Streptozotocin was given via tail vein to produce diabetes mellitus (DM) in the first group rats. The second group rats were treated only with % 0.9 saline and considered as non-DM group. Thoracic aorta rings from both DM and non-DM rats exposed to PEMF were evaluated for contraction and relaxation responses and membrane potential changes in the presence or absence of chemical agents that were selected to test various modes of action.

**PEMF treatment significantly increased the relaxation response of the diabetic rings to acetylcholine, and reduced the concentration response to phenylephrine. Resting membrane potential was significantly higher in DM than in non-DM group. Inhibitors of nitric oxide (NO), both nitro-L-arginine (L-NO-ARG) and L-NO-ARG + indometacin combination, produced a significant transient hyperpolarisation in all groups.**

**PubMed.gov**

U.S. National Library of Medicine  
National Institutes of Health

# **PEMF Therapy Increases Cellular Membrane Permeability and Cellular Metabolism**

As early as 1940, it was suggested that magnetic fields affect the TMP and the flow of ions in and out of the cells and might therefore influence cellular membrane permeability.

It has since been established that magnetic fields can influence ATP (Adenosine Triphosphate) production; increase the supply of oxygen and nutrients via the vascular and lymphatic systems; improve the removal of waste via the lymphatic system; and help re-balance the distribution of ions across the cell membrane.

Healthy cells in tissue have a voltage difference between the inner and outer membrane referred to as the membrane resting potential that ranges from -70 to -80 mV. This causes a steady flow of ions through its voltage-dependant ion channels.

**As the magnetic field created fluctuates, it induces an electron flow or a current in one direction through the living tissue. As electrons always flow from a negative (cathode) to a positive (anode) potential, when the magnetic field vanishes, the direction of the electron flow is reversed. Therefore such induced polarized currents stimulate the exchange of ions across the cell membrane.**

# Electroporation

*From Wikipedia, the free encyclopedia*

**Electroporation, or electropermeabilization, is a significant increase in the electrical conductivity and permeability of the cell plasma membrane caused by an externally applied electrical field.** It is usually used in molecular biology as a way of introducing some substance into a cell, such as loading it with a molecular probe, a drug that can change the cell's function, or a piece of coding DNA.

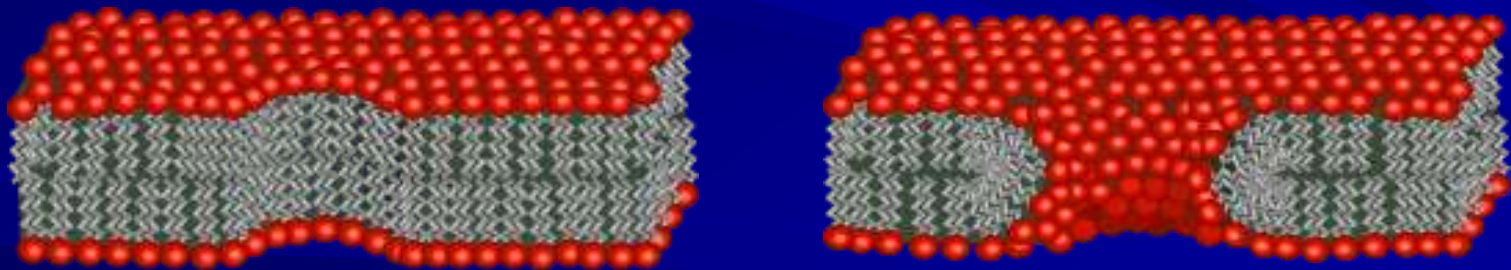
**Electroporation is done with electroporators, appliances that create an electro-magnetic field within the cell solution.**

Electroporation is used in cancer treatment to help deliver drugs or genes into the cell by applying short and intense electric pulses that transiently permeabilize cell membrane, thus allowing transport of molecules otherwise not transported through a cellular membrane. This procedure is referred to as electrochemotherapy when the molecules to be transported is a chemotherapeutic agent or gene electrotransfer when the molecule to be transported is DNA.

## Physical Mechanism of Electroporation

Electroporation allows cellular introduction of large highly charged molecules such as DNA which would never passively diffuse across the hydrophobic bilayer core. This phenomenon indicates that the mechanism is the creation of nm-scale water-filled holes in the membrane.

Although electroporation and dielectric breakdown both result from application of an electric field, the mechanisms involved are fundamentally different. In dielectric breakdown the barrier material is ionized, creating a conductive pathway. The material alteration is thus chemical in nature. In contrast, during electroporation the lipid molecules are not chemically altered but simply shift position, opening up a pore which acts as the conductive pathway through the bilayer as it is filled with water.

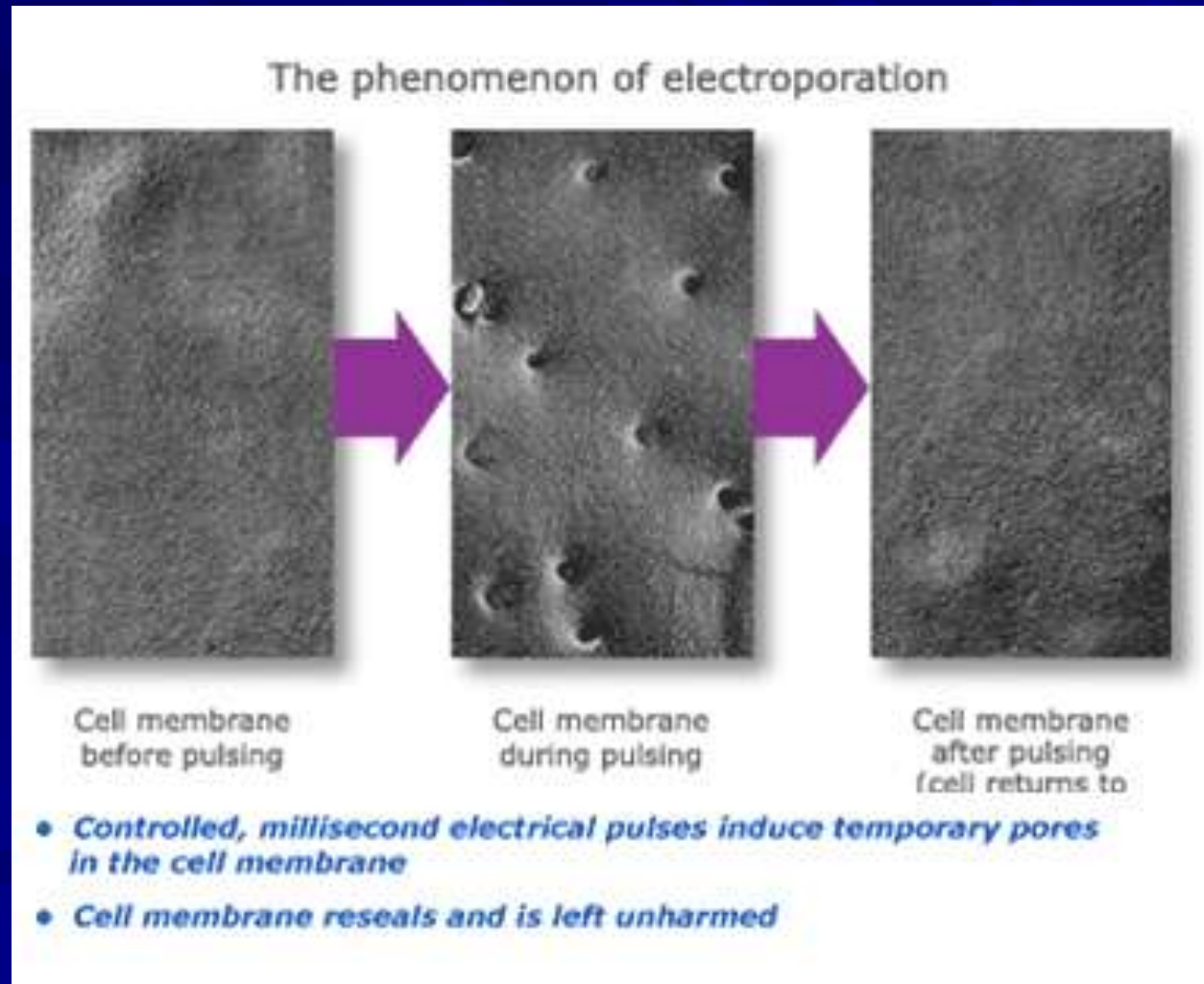


Schematic showing the theoretical arrangement of lipids in a hydrophobic pore (left) and a hydrophilic pore (right).

# PEMF induces Electro-poration – Increasing Cellular (TMP) Transmembrane Potential

PEMF stimulates electroporation of the cell membrane, where tiny pores or “ion channels” are opened during pulses.

This effect increases trans-membrane potential, electron transport, and free radical scavenging, which is significantly important for anti-aging and treating chronic diseases including cancer.



## **Electroporation and alternating current cause membrane permeation of photodynamic cytotoxins yielding necrosis and apoptosis of cancer cells**

Nelly Traitcheva, Hermann Berg.



To increase the permeability of cell membranes for low doses of cytostatic drugs, two bioelectrochemical methods have been compared:

- (a) electric pore formation in the plasma membranes by single electric impulses (electroporation), and
- (b) reordering of membrane structure by alternating currents (capacitively coupled).

These treatments were applied to human leukemic K-562 cells and human lymphoma U-937 cells, yielding apoptotic and necrotic effects, determined by flow cytometry.

Additional cell death occurs after exposure to light irradiation at wavelengths  $\lambda > 600$  nm, of cells which were electroporated and had incorporated actinomycin-C or daunomycin (daunorubicine).



**It is observed that drug uptake** after an exponentially decaying electro poration pulse of the initial field strength  $E_0 = 1.4$  kV/cm and pulse time constants in the time range 0.5–3 ms, is faster than during PEMF-treatment, i.e., application of an alternating current of 16 kHz, voltage  $U < 100$  V,  $I = 55$  mA, and exposure time 20 min.

However, at the low a.c. voltage of this treatment, more apoptotic and necrotic cells are produced as compared to the electroporation treatment with one exponentially decaying voltage pulse.

Thus, **additional photodynamic action appears to be more effective than solely drugs and electroporation**, as typically applied in clinical electro chemotherapy, and somewhat more effective than the noninvasive pulsed electromagnetic fields (PEMFs), for cancer cells in general and animals bearing tumors in particular.

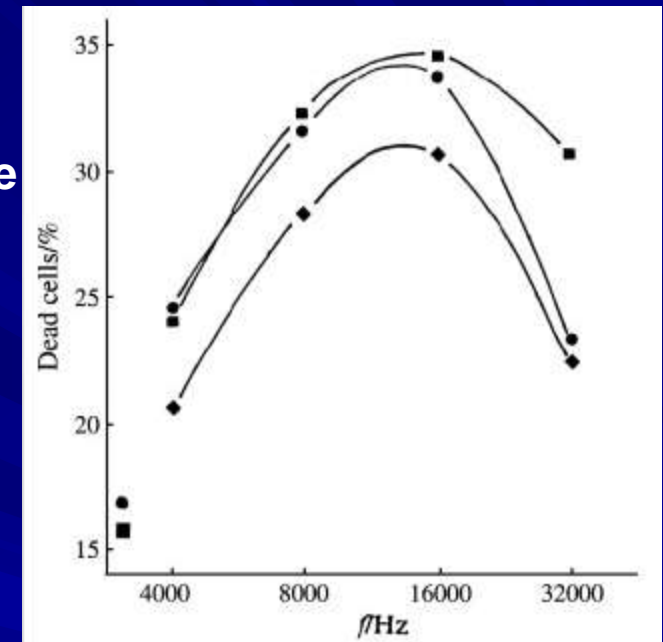
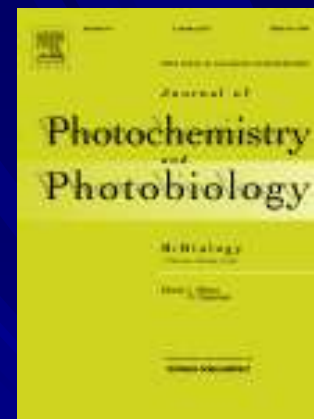


Fig. 1. Frequency dependence. % (death) as a function a.c. current frequency  $f$  for the number  $N(\text{dead})$  of dead U-937 cells, determined by TP colouring: the percentage dead is defined by  $\% \text{ dead} = 10^2 N(\text{dead})/N(\text{total})$ . See Eq. (1) of the main text. Lethal effect by penetration of the drugs alone into the cells after 20 min, below left: (■), for actinomycin-C ( $1 \times 10^{-5}$  M); (●), for daunomycin ( $1 \times 10^{-5}$  M), both without a.c. field pulses. (⊕) lethal synergism after 20 min exposure to a.c. field pulses in the presence of drugs: (■) plus actinomycin-C ( $1 \times 10^{-5}$  M) (●) plus daunomycin ( $1 \times 10^{-5}$  M).

## Photodynamic effect on cancer cells influenced by electromagnetic fields

Panga L, Baciub C, Traitchevac N, Berg H.



The synergism of low-frequency electromagnetic field treatment and photodynamic effect on killing of cancer cells presented. The weak pulsating electromagnetic field (PEMF) generated by Helmholtz coils in the mT range influences the permeability of cell membranes for photo-sensitizers.

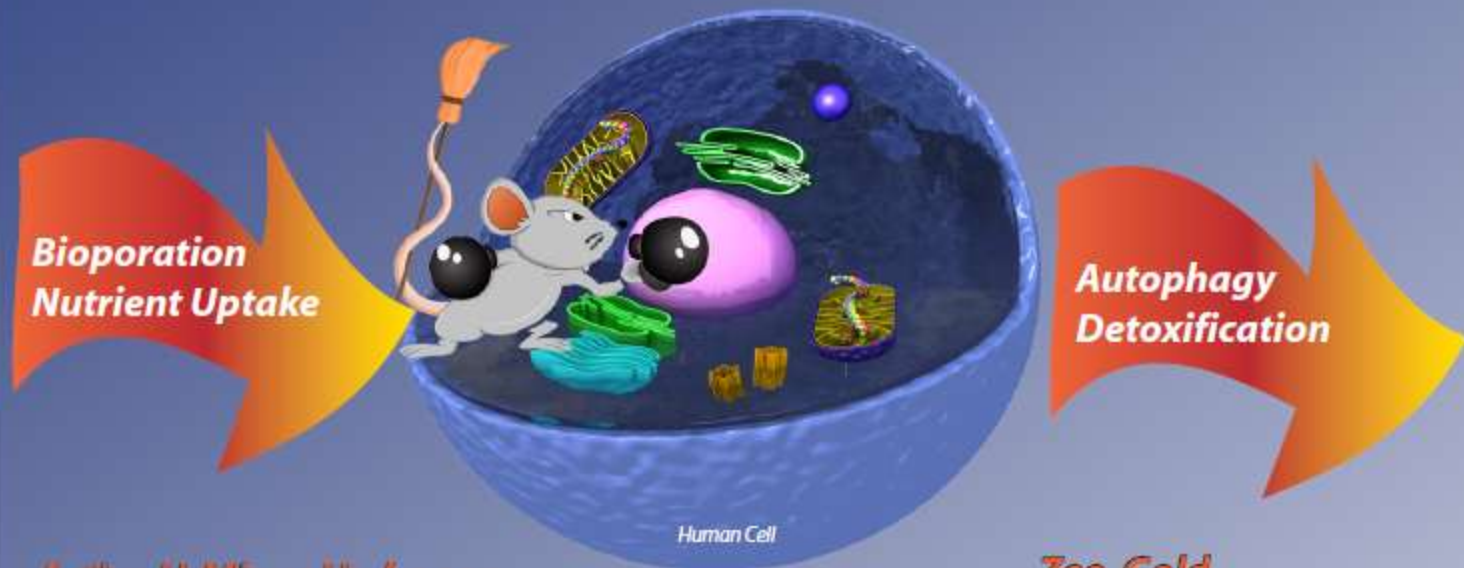
Several types of sensitizers were excited by visible light during incorporation without and with two kinds of PEMF treatment. In the first part suitable photo sensitizers were selected in the absorption range between 400 and 700 nm against human myeloid leukaemia K562, and human histiocytic lymphoma U937, cells by treatment of PEMF consisting of rectangular pulse groups.

In the second part **amplitude and frequency dependencies were measured using sinuous PEMF and white light with the result that after 12 min the PEMF treatment enhanced photodynamic effectivity by more than 40% over the control value.** Taking into account the influence of many parameters, an additional optimization will be possible by photodynamic PEMF synergism for an increased drug delivery in general.

# M.I.C.E. = Magnetically Induced Cellular *EXERCISE*

## **Advanced Detoxification**

*With Electro-Nutrient Therapy (ENT) requiring  
PEMF as M.I.C.E (Magnetically Induced Cellular Exercise)*



*Active H-Minus Hydrogen  
Bio En'R-Gy' - C  
Beyond Chelation Improved (BC-I)  
Zeo-Gold*

*Zeo-Gold  
Bio En'R-Gy' - C  
Beyond Fiber  
EDTA (calcium edta)*

# Electromagnetic Therapy

## for energy production and cellular detoxification

In an article published in *Plos One*, November 2010, volume 5, issue 11 (Wang), page 4, Johns Hopkins' researchers found a **38% increase** in ATP production in P12 cells that were placed in a static magnetic field device that we supplied.

This increase could be much higher *in vivo* with the brain's pulsed DC electromagnetic field interacting with an enhanced earth-type field resulting in increased resonance of the mitochondria. All of this leading to enhance electron transfer in the creb cycle resulting in more ATP production.

↑ ATP equals ↑ Na<sup>+</sup> K<sup>+</sup> pump function  
which leads to ↑ charge of the cell  
wall and ↑ metal excretion.

J Altern Complement Med. 2007 Nov;13(9):955-67.

## **Can electrons act as antioxidants? A review and commentary.**

Oschman JL. PMID: 18047442 [PubMed - indexed for MEDLINE]



**It is well established, though not widely known, that the surface of the earth has a limitless and continuously renewed supply of free or mobile electrons as a consequence of a global atmospheric electron circuit.**

**Wearing shoes with insulating soles and/or sleeping in beds that are isolated from the electrical ground plane of the earth have disconnected most people from the earth's electrical rhythms and free electrons.**

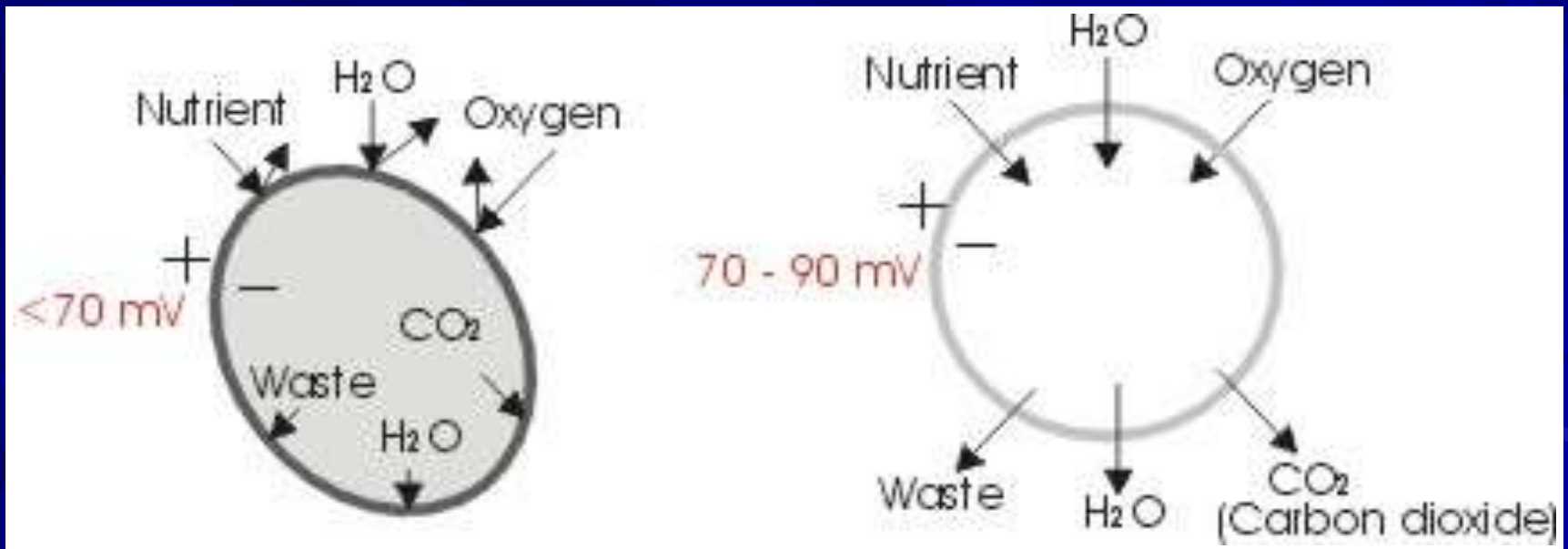
**Studies have demonstrated that connecting the human body to the earth during sleep (earthing) normalizes the daily cortisol rhythm and improves sleep. It is also suggested that free electrons from the earth neutralize the positively charged free radicals that are the hallmark of chronic inflammation. The research summarized here and in subsequent reports provides a basis for a number of earthing technologies that restore and maintain natural electrical contact between the human body and the earth throughout the day and night in situations where going barefoot on the earth is impractical.**

**It is proposed that free or mobile electrons from the earth can resolve chronic inflammation and pain by serving as natural antioxidants.**

## PEMF Exercise Therapy can Increase the Effectiveness of Anti-oxidants 100 Fold!

PEMF creates a Negative-Potential energy field to induces subtle current flows and generate a very large amount of negative ions inside human body. Negative Ions stimulate the activity of the **Na<sup>+</sup>/K<sup>+</sup>-ATPase** to enhance **Na<sup>+</sup>/K<sup>+</sup> pump** and to maintain the cell potential at 70 – 90 mV.

Increasing cellular energy and membrane potential assists in uptake of oxygen, H<sub>2</sub>O, anti-oxidants and other critical nutrients into the cell...while toxins, cellular waste and carbon dioxide are purged.



Low energy "sick" cell < 70mV

Normal healthy cell = 70-90 mV

# **FIGHT for Your Health with Dr. Gordon's Power Drink**

**Beyond Fiber - 1 rounded tsp**

**Bio En'R-G'y C - 1 rounded tsp**

**MACA Powder - 1/2 tsp**

**Dr. Gordon's Organic  
Best of Greens - 1 rounded tsp**

**ZeoGold\* - 1 capsule (twist open and dissolve in drink)**



# **ZeoGold™ Has Superior DETOX Capacity and Performance**

**Generally, ZeoGold™ powder has superior DETOX capacity and performance for inorganic metallics vs. other zeolite DETOX products, because of the higher CEC capacity, ultrahigh surface area available for sorption and optimized particle size. The natural zeolites remove Pb or other metal cations present in water solutions and biological, aqueous milieu via:**

- a) exchange for ions (e.g., Na, K, Ca, H<sup>+</sup>) in the zeolite, crystallites for the Pb or other metal cation.*
- b) by direct, surface sorption.*
- c) by physically, removing particulate forms of Pb or trace metals that get “trapped” in the zeolite, micro-crystals or pore structures.*
- d) indirectly, by altering the intestinal tract microflora and/or bio-film layer that can alter the utilization or processing of trace metals.*

**The mechanism for removal of Pb and other toxic, trace metal cations for ZeoGold™ is the same as for Clinoptilolite products, but superior DETOX performance can be expected from the ZeoGold™ doses (100 to 250 mg/day) than the Clinoptilolite products.**





*J Clin Biochem Nutr.* 2012 May;50(3):195-8. Epub 2011 Nov 29.

## **Natural zeolites chabazite/phillipsite/analcime increase blood levels of antioxidant enzymes.**

Dogliotti G, Malavazos AE, Giacometti S, Solimene U, Fanelli M, Corsi MM, Dozio E.

Dipartimento di Morfologia Umana a Scienze Biomediche "Città Studi", University of Milan, Via Mangiagalli 31, 20133 Milan, Italy.



### **Abstract**

**Imbalance between reactive oxygen species generation and antioxidant capacity induces a condition known as oxidative stress which is implicated in numerous pathological processes.** In this study we evaluated whether natural zeolites (chabazite/phillipsite/analcime) may affect the levels of different antioxidant enzymes (glutathione peroxidase, superoxide dismutase, glutathione reductase), total antioxidant status and oxidative stress in 25 clinically healthy men, both non-smokers and smokers. Measurements were performed on whole blood or on plasma samples before (T0) and after 4-weeks zeolites intake (T1).

At T1, glutathione peroxidase, superoxide dismutase and glutathione reductase increased compared to T0 levels, both considering all subjects as joint and after subdivision in non-smokers and smokers. Differently, a reduction in total antioxidant status was observed at T1. Anyway, total antioxidant status resulted higher than the reference values in both groups at each time point. **A decrease in lipid peroxidation, a major indicator of oxidative stress assessed by monitoring thiobarbituric acid reactive substances, was observed in all subjects at T1.** Our results suggested that natural zeolites may help to counteract oxidative stress in apparently healthy subjects exposed to different oxidative stress risk factors, such as smoking, thus representing a particular kind of food with potential antioxidant properties.

## **Visible benefit using Zeolite-based topical cream.**

**Zeolite has the ability to draw out impurities, and neutralize free radical damage that age the skin.**



**Zeolite as an antioxidant also helps to restore natural pH-value, balancing acid and irritated skin conditions.**



## Improve Nitric Oxide Concentrations with Longevity Maca (Lepidium meyenii Walp)

Maca's reputation as a powerful enhancer of strength and stamina and as a libido-fertility herb goes back more than 500 years, and today it is gaining worldwide attention for its effectiveness.

Maca is a radish-like root that grows in the mountains of Peru. Peruvian Maca Root naturally contains significant amounts of amino acids, carbohydrates, vitamins, and minerals.



**Maca is rich in L-arginine.** Studies have even shown the ability of maca to stimulate nitric oxide production in human tissue.

**Maca is both a hormone balancer and an adaptogen.** It helps stimulate the pituitary gland, acting as a kind of tonic for the hormone system. When the pituitary gland functions optimally, the entire endocrine system becomes balanced, because the pituitary gland controls the hormone output of the other three glands.



**Bio En'R-G'y C** is an exciting new form of Ribose Nucleotide Activated (RNA) Vitamin C containing Riboperine metabolites that safely allows patients to take daily high doses without stomach upset, cramping, or diarrhea.

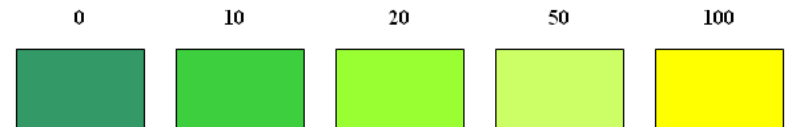
Each serving of Bio En'R-G'y C 's unique form of L-Ascorbate C crystals, has been further enhanced with 2000 mg of GMS-Ribose for increased bio-availability.

Preliminary double blind, human trials on one or more of the ingredients of GMS-Ribose taken with Vitamin C have been shown to enhance the uptake of Vitamin C plasma levels above 30% of subjects on placebo.



**A BRIGHT SPOT**  
on this urine stick  
test means  
you will have a  
brighter future!

#### COLOR CHART – mg/dL vitamin C (Ascorbic Acid)



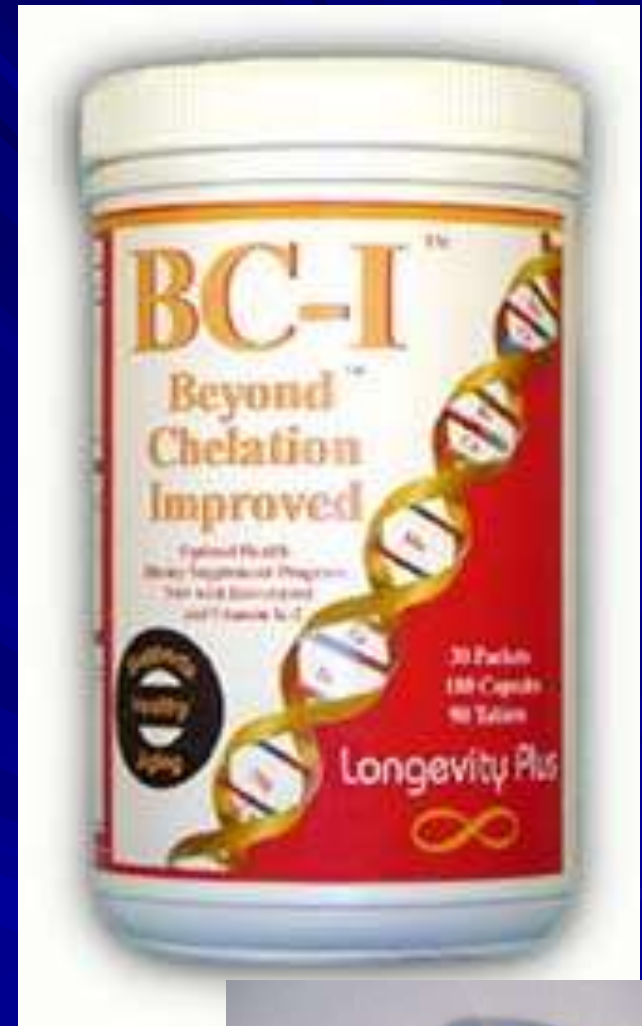
#### Directions:

1. Dip reagent strip in freshly collected urine and remove immediately or alternatively, wet the reagent strip by passing through the urine stream.
2. While removing, run the edge of the strip against the rim of the urine collection cup to remove excess urine.
3. 30 seconds after removing from urine, compare reagent side of test area with corresponding color chart.

## Beyond Chelation Improved (BC-I)

Each canister of Beyond Chelation Improved™ contains 30 packets. Each packet consists of:

- 3 *Beyond Any Multiple*™ caplets with **Vitamin K2**, Resveratrol, Tocotrienols, and Utah Sea Minerals
- 3 *Essential Daily Defense*™ capsules (which deliver a combined total of 400 mgs of EDTA)
- 1 Omega 3 marine lipid concentrate
- 1 Evening Primrose Oil capsule
- 1 Phosphatidyl Ginkgo Biloba capsule.





## **H.R.T. Plus (Herbal Remedy from Thailand)**

**The New Activated Herbal Remedy from Thailand (H.R.T.) containing Pueraria mirifica, a Bio-Identical PhytoEstrogen complex of PhytoEstrogen and Isoflavones.**

**Pueraria mirifica is an indigenous herb of Thailand, known as "Kwao Kru", belonging to the soy, bean & pea subfamily. Active principles in this plant are found in the tuberous root, which looks like a chain of round-shaped bulbs of various sizes connected to the next one via small root throughout the entire length of the root.**

**In a 2007 comparison study of the efficacy of Pueraria mirifica (PM) against Conjugated Equine Estrogen (CEE) with/without Medroxyprogesterone Acetate (MPA) in the treatment of climacteric symptoms in perimenopausal women.**

**PM was found to have estrogenic effect as similar as CEE, but without risk of increase of breast cancer incidence typically associated with CEE and/or MPA treatments.**



## Estrogen-like activities and cytotoxicity effects of Thai herbal medicines as natural ingredients in anti-ageing

Yingham B, et al.

The objective of the study was to search for the appropriate herbal extracts by comparative analysis of their estrogenic and cytotoxic activities. Some potentially estrogenic activity of herbal extracts in the management of female disorder symptoms was investigated by E-screen assay.

The extract of *P. candollei var mirifica* exerted the strongest estrogenicity and gave the highest level in growth promoting activity. It significantly stimulated cell proliferation at concentrations of 0.1-50  $\mu$ /ml ( $p < 0.05$ ) whereas higher concentration (100  $\mu$ g/ml) suppressed the growth of such cells. The maximal proliferative effect of this extract was achieved at 50  $\mu$ g/ml which is higher than the effect displayed by 0.1 nM E<sub>2</sub>.

**Results indicated that the phytoestrogenic substances in the extracts exerted their estrogenic activities through estrogen receptor pathways.**

## Beyond GHS

Formulated with **resveratrol**, chromium picolinate and **arginine**, and herbal blend including tribulus terrestris, and moomiya.



**Tribulus terrestris** is a herb that has been used in traditional medicine of China and India for centuries. Research in Bulgaria and Russia indicates that tribulus increases levels of hormones testosterone (by increasing luteinizing hormone), DHEA, and estrogen.



The hardy **schizandra** plant, also called the magnolia vine, is an ancient and traditional Chinese remedy, used to help alleviate a wide range of illnesses and conditions, and is believed to work by activating enzymes to produce glutathione.



**Moomiyo**, or “mumie” is a bio-stimulator, serves to elevate the immune system and neuro-hormonal regulation, controls oxidation-reduction processes, and has a positive influence on mineral metabolism. has been used by the elite Russian military and sports establishment for nearly four decades for increasing strength and muscle mass as well as for its recuperative powers.





## Neo40™ Daily

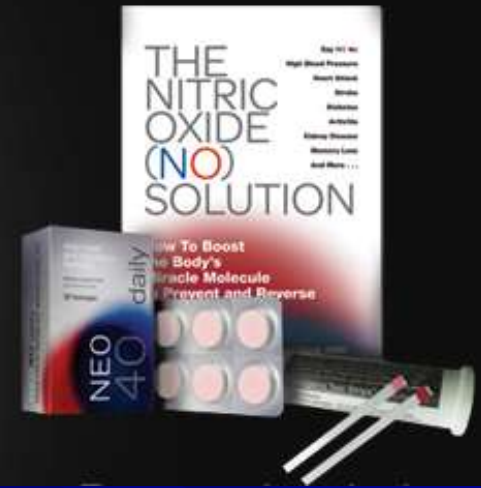
Safe and Natural lozenges. Restore your body's natural ability to produce Nitric Oxide.

Erectile dysfunction may be a sign of insufficient Nitric Oxide & cardiovascular disease.

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Dr. Edward Chafizadeh  
Cardiologist



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**LEAD in bones requires years of continuous oral chelation with EDTA and/or Zeolite.**

**Because bones take an average of 15 years to fully regenerate, IV EDTA chelation therapy over several months only removes lead and other toxic metals from the body's blood and tissues, NOT from bones.**

**Harvard studies prove that bone lead leads to heart disease and cataracts, as Bones are the MAJOR storehouse of lead in the body.**

**For more information see the  
507 References Supporting Oral EDTA**

**On the Gordon Research Institute Website at**

**[www.gordonresearch.com](http://www.gordonresearch.com)**

# Pulse 4 Life

[Visit Our Main Web Site](#)



In 25 years of practice, I have never seen anything like the PMT-100. This device has completely changed my practice and my life. It has more than doubled my practice, and reinstilled excitement in both my practice and myself.

I could not imagine treating patients without this device in my office as I would be cheating my patients otherwise.

**Every chiropractor NEEDS to have this technology in their office!**

Dr. Kim Shunkwiler, DC  
Westland, MI



"As a licensed Practitioner, you need to search for alternative ways to treat conditions. I've been practicing for 40 years and one of the most exciting things I've seen is this PEMF Technology.

Utilizing this technology adds a whole NEW dimension to a practice.

Dr. Allen Unruh, DC



"This is the most simplest device that can change your life and that of your patients. Every practitioner needs this type of Cellular Exercise in their Practice."

Dr. Garry Gordon  
MD, DO, NP  
Founder of Gordon Research Institute



I was personally involved in a bad motorcycle accident 4 years ago that left me crippled up and disabled. The Ortho team was able to save my right leg. In just 2 treatment sessions with the PMT 100 device I was able to alleviate almost 100% of the pain. This device has helped me get back a productive life.

Can you imagine a device that can provide your practice with a GREAT source of secondary stream Income and offer noticeable pain reduction for your patients? I believe that any practice without this technology will be left behind.

Dr. Curtis Ficenece, DC  
Fargo, ND

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Full Screen	Nutrigenomic Weight Management	Autism/ADHD Nutritional Support	Gene	SNPs	Name	Markers - Metabolic & Micronutrient	Nutritional Products	Protocol / Intervention
Lipid	Lipid Metabolism Type	Lipid Metabolism						Refer to specific Panel <a href="#">smart DNA Report</a>
Lipid	HDL regulation	Type Metal Binding	APOE	2	Apolipoprotein E			
Lipid			APOA1	1	Apolipoprotein A-I			
Lipid			APOC3	1	Apolipoprotein C-III			
Lipid			APOB100	1	Apolipoprotein B			
Lipid	Plasma Triglycerides		APOA5	2	Apolipoprotein A-V			
Lipid			CETP	2	Cholesteryl ester transfer protein			
Lipid	Fat absorption		FAPB2	1	Fatty acid binding protein type 2			
Lipid			ABCA1	1	ATP binding cassette transporter 1	1. Liposcan 2. Micronutrients Cu, Zn, selenium 3. Lipid Peroxidation 4. Fatty Acid Profile 5. Oxidated LDL		
Lipid			LPL	3	Lipoprotein lipase			
Lipid			LDLR	2	Low density lipoprotein receptor			
Lipid	Body fat metabolism	Body fat metabolism	ADRB2	2	Beta-adrenergic receptor 2			
Lipid	Body fat metabolism	Body fat metabolism	ADRB3	1	Beta-adrenergic receptor 3			
Lipid	Insulin resistance	Insulin resistance	PPAR-γ	1	activated receptor gamma			
Lipid N/A	Adiponectin/obesity		ADIPOQ	1	Adiponectin			
Lipid N/A	Childhood obesity		FTO	1	Fat mass and obesity associated gene			
Lipid N/A	Inhibition of lipolysis		PLIN	1	Perilipin 1			
Lipid			E-selectin	1	CD62 antigen-like family member E or endothelial-			
Lipid	HDL level		LIPC	1	Lipase			

\* Phase I and Phase II Detox (Anti-aging) \* Oxidative Stress \* Bone Health  
 \* Lipid Profiling \* Diabetes \* Inflammation \* Nutria-gen \* Lactose Intolerance  
 \* Weight & Exercise Management

# **FACT** (Forum on Anti-Aging and Chelation Therapy)

**FACT** is the world's largest **FREE** online school of Advanced Alternative Medicine with over 3000 practicing Healthcare Professionals participating and sharing their wisdom and experience with one another.



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***THANK YOU***



***Garry F. Gordon MD, DO, MD(H)***