

NO Sex... Have Life Have Fun!

Naturally Increasing Your Nitric Oxide levels
with Quantum Biology-Based Energy Medicine
and natural supplements

*Dr. Garry F. Gordon, MD, DO, MD(H)
Gordon Research Institute (GRI)
Payson, Arizona - January 16, 2013*



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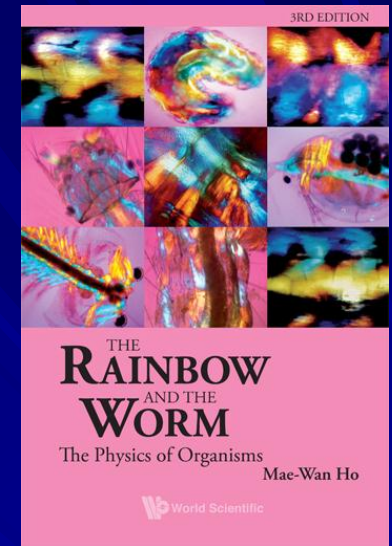
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“We are all light deficient and this deficiency may be the source of our physical and emotional problems.”

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

What is Life?

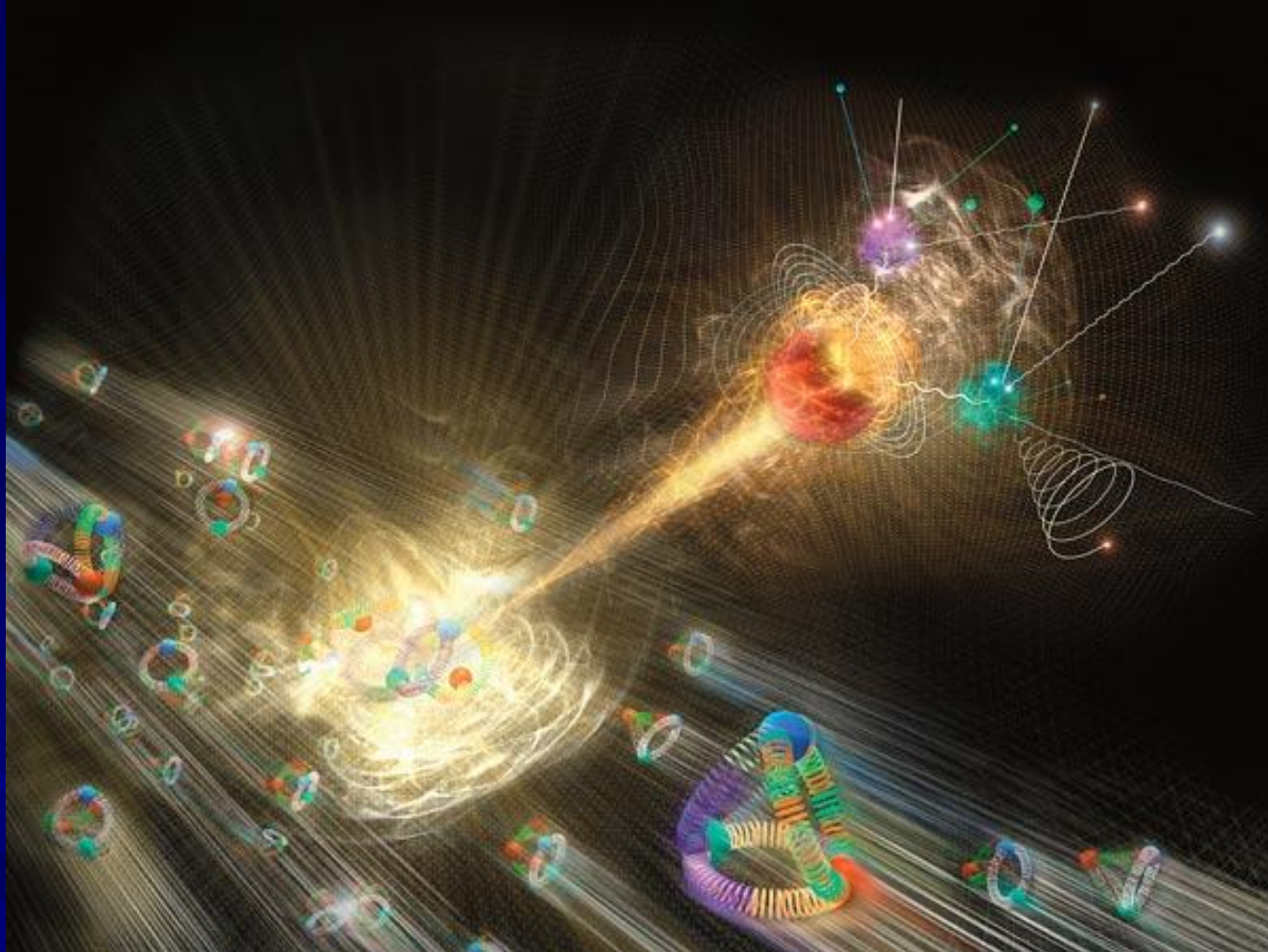
This highly unusual book began as a serious inquiry into Schrödinger's question, "What is life?", and as a celebration of life itself. It takes the reader on a voyage of discovery through many areas of contemporary physics, from non-equilibrium thermodynamics and quantum optics to liquid crystals and fractals, all necessary for illuminating the problem of life.



“Being alive is to be extremely sensitive to specific cues in the environment, to transduce and amplify minute signals into definite actions. Being alive is to achieve the long range coordination of astronomical numbers of submicroscopic, molecular reactions over macroscopic distances; it is to be able to summon energy at will and to engage in extremely rapid and efficient energy transduction.” ~ Dr. Mae Wan Ho

Life resides in the patterns of dynamic flows of matter and energy that somehow makes organisms alive, enabling them to grow, develop and evolve. Recent developments in physics and chemistry are particularly relevant for our understanding of biological phenomena.

AS ABOVE – SO BELOW: Higgs Boson “God Particle” Discovered?



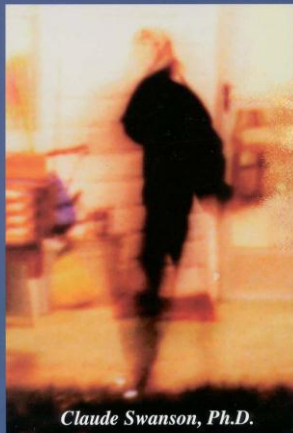
The long-sought particle, thought to be at the core of ALL existence, may complete the standard model of physics by explaining why objects in our universe have mass—and in so doing, why galaxies, planets, and even humans have any right to exist.

In an artist's conception, a Higgs boson erupts from a collision of protons.

Illustration by Moonrunner Design Ltd., National Geographic

The Synchronized Universe - A new scientific revolution!

THE
SYNCHRONIZED UNIVERSE
NEW SCIENCE OF THE PARANORMAL



Claude Swanson, Ph.D.

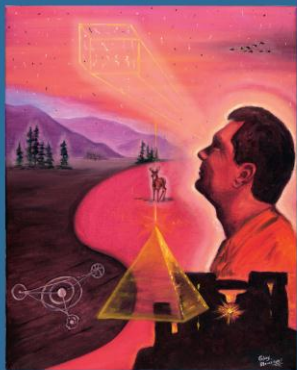
Physicist Dr. Claude Swanson, educated at MIT and Princeton University, describes the latest discoveries in Energy Medicine.

“We are learning the ‘Secret of Life’, how the body’s trillions of cells grow, repair and heal... Electromagnetism and Earth energies hold part of the answer... we are witnessing the integration of CONSCIOUSNESS with physics“

It is called CHI, PRANA, MANA, ORENDO, WAKEN, BARAKA, and LIFE FORCE.

LIFE FORCE, The Scientific Basis:

Breakthrough Physics of Energy Medicine,
Healing, Chi and Quantum Consciousness

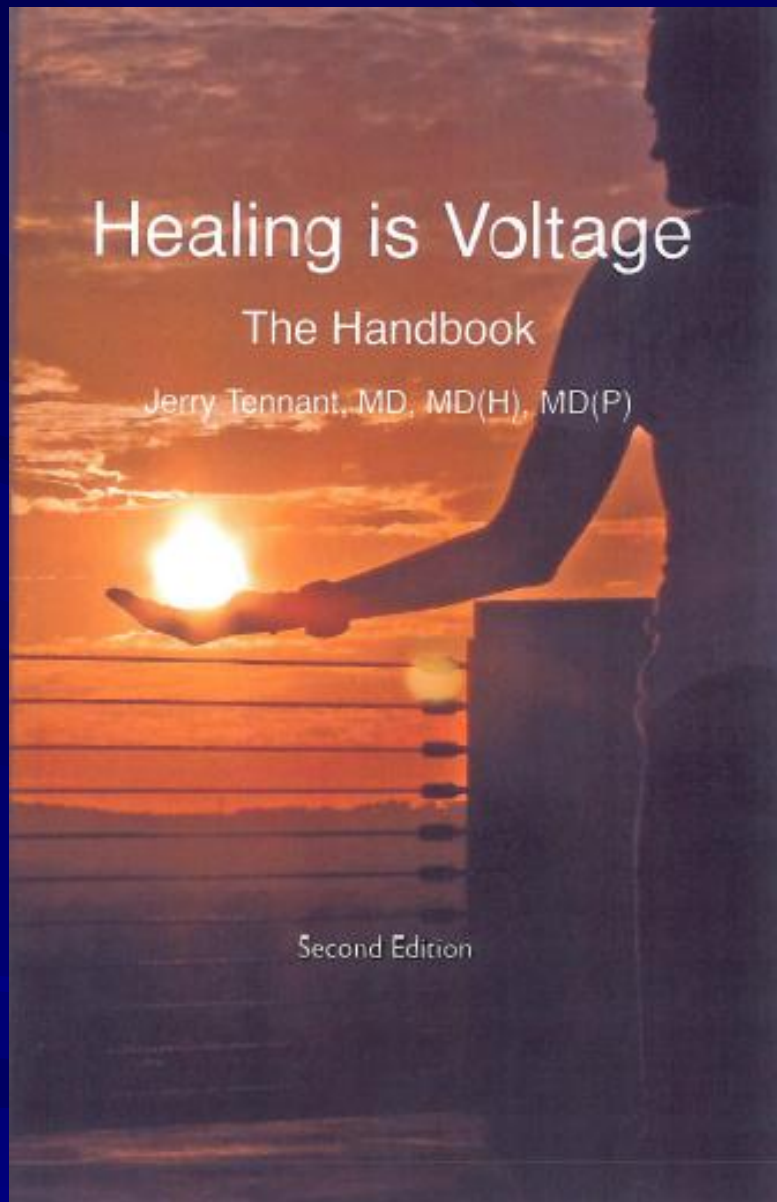


Claude Swanson, Ph.D.
Volume II of The Synchronized Universe Series

It is the energy which enables adepts, Yogis and Shamen to achieve the miraculous feats they do. It enables QiGong masters from China to project their energy over thousands of miles to heal injured cells and to cure cancer in laboratory experiments.

Today we have documented proof of how this energy changes the laws of physics, bringing together the Theory of Relativity and Quantum Mechanics, and is the explanation for many strange phenomena which we in the West call "paranormal."

<http://synchronizeduniverse.com/>



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.

The Bio-Physical Principals

Quantum “Photonic” Medicine is the Medicine based on the Bio-Physics of the Functional-Cellular / Molecular / and Atom’s Levels of Responses for:

- 1) Cell to Cell Communication: Recognition and Signaling
Extra e Intra – Cellular transmission.
- 2) Physiology of our Cytosol Organelles
- 3) Processes of Synthesis
- 4) Functional Physiology of our Immune System
- 5) Functional Physiology of Cells Reproduction and
Regeneration

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

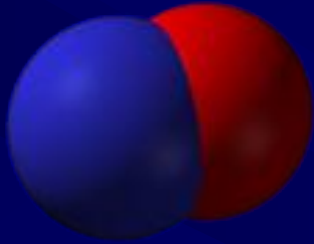


Rafael Palmeiro seems an unlikely Viagra pitchman. The Texas Rangers slugger is only 37 and won't admit to having erection problems, yet he recently agreed to appear in ads promoting the drug. The deal has made people wonder whether Palmeiro really represents men with erectile dysfunction, or whether 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!



What is Nitric Oxide (NO)?

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

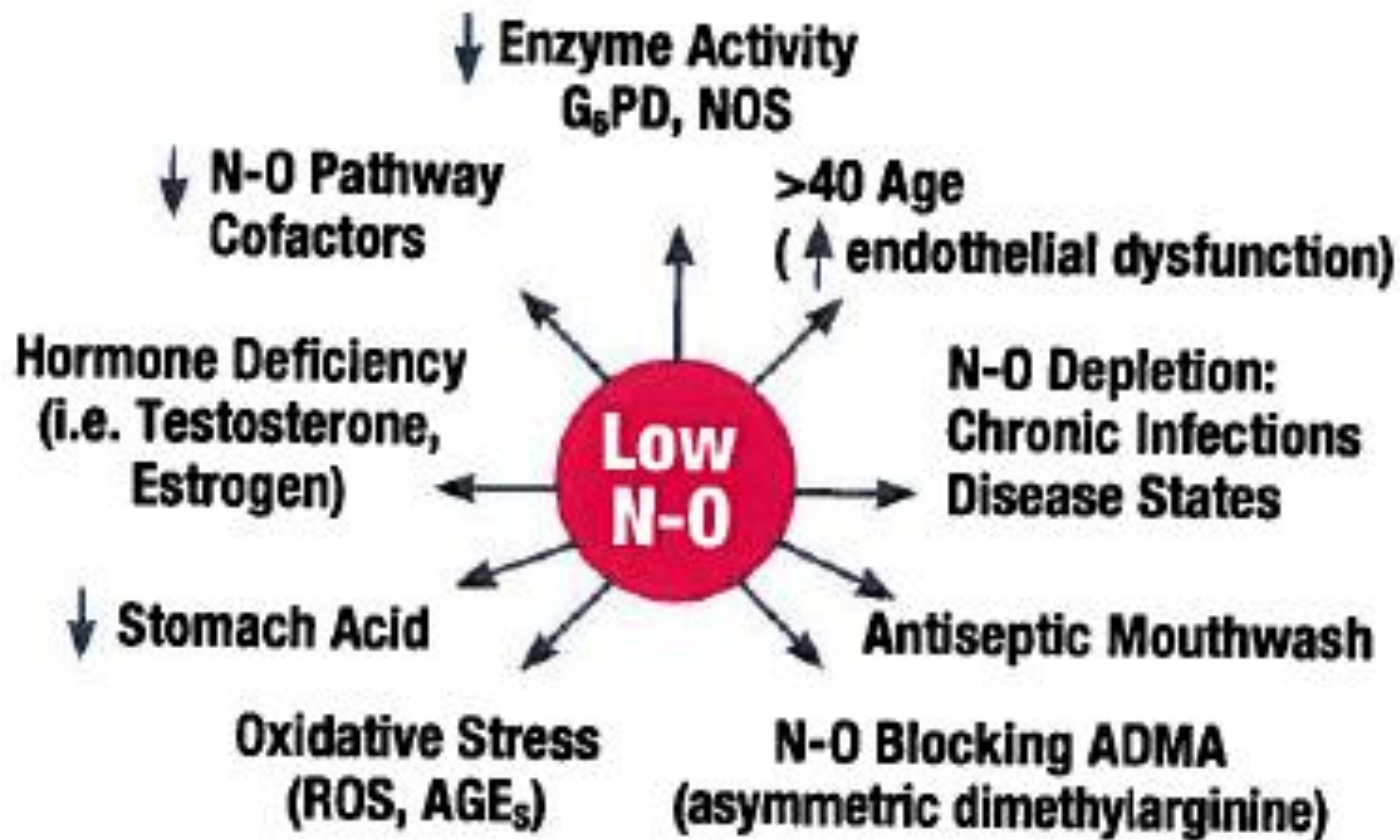
NO is a powerful vasodilator with a short half-life of a few seconds in the blood, but it affects blood flow and nerve responses very rapidly. Small increases in NO lead to increased circulation and to better sensory perception.

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

Nitric Oxide: The New Hero of Human Biology

By Marissa Kantor - February 08, 2005

A few extra minutes on the stairmaster might be more beneficial than you thought. A longer workout means more production of nitric oxide -- an enzyme that could save you from heart disease and other problems.

Three scientists, Louis Ignarro, Robert Furchgott and Ferid Murad, were the first to identify the artery-dilating properties of nitric oxide – and won them a nobel prize. Specifically, they identified the following process: the innermost layer of cells (**called the endothelium**) releases nitric oxide when triggered by the enzyme nitric oxide synthase.

Researchers are continuing to study the possible uses of nitric oxide and its link to heart disease prevention. In the meantime, scientists recommend that you maximize nitric oxide production in your body by following routines that hopefully are already familiar to you: a **low-fat diet, mild to moderate exercise, smoking cessation and better "cellular nutrition."** This includes consuming antioxidants like **vitamins A and C, which prevent the breakdown (oxidation) of nitric oxide in the body.**

Increase your Nitric oxide through Diet...

One way to increase your body's Nitric Oxide level is through the foods you eat. Beets, nuts, brown rice, artichokes, spinach, root vegetables, eggs, fish and poultry can help your body produce Nitric Oxide.



In certain regions of the world, such as the Mediterranean, the indigenous people have a low incidence of cardiovascular disease. Emerging research indicates the Mediterranean diet may promote Nitric Oxide production and help these people become more resistant to disease.

Additionally, foods rich in antioxidants, especially Vitamins C and E, have properties that can improve and help sustain Nitric Oxide levels.

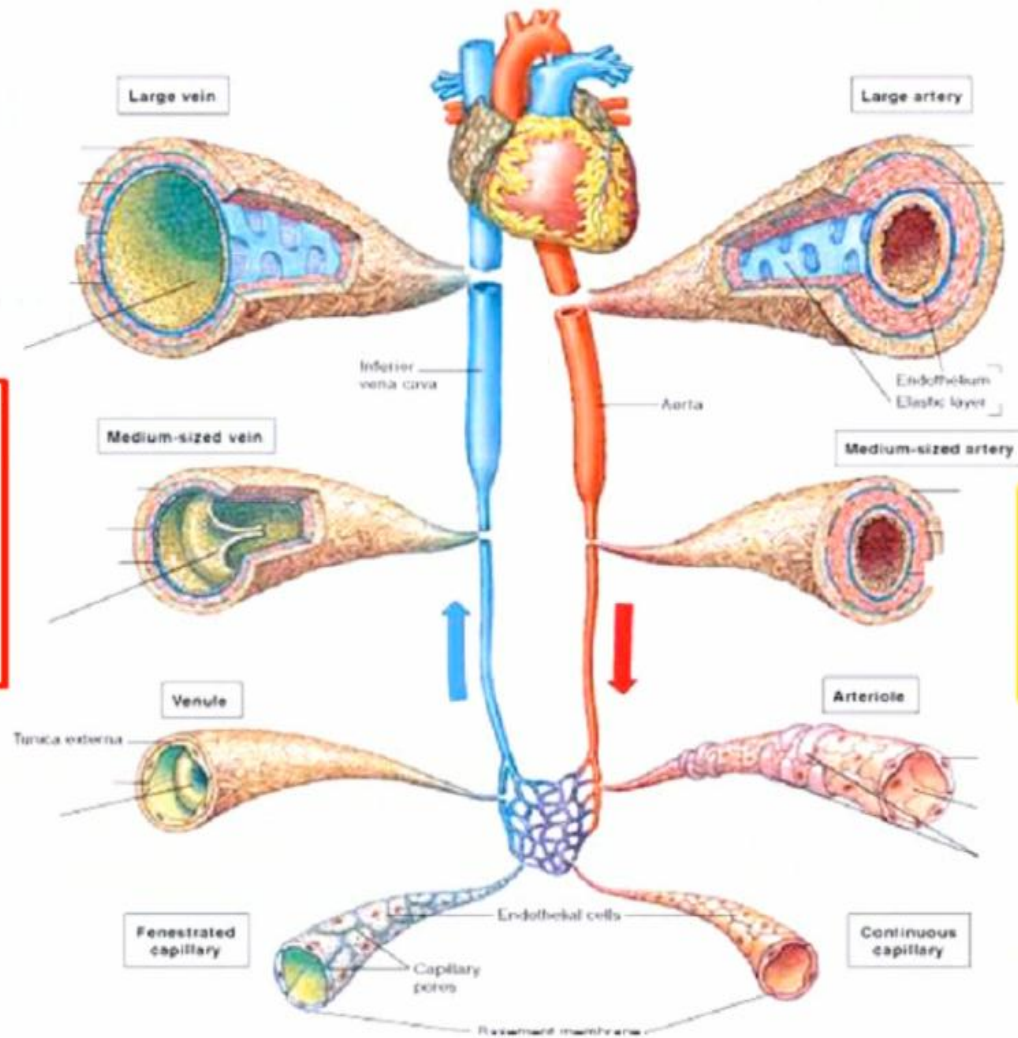
The nitrate-nitrite-nitric oxide pathway was originally suggested and later demonstrated to be the mechanism for many of the health benefits from

vegetables. A telling point is that the DASH diet for reducing hypertension is higher in dietary nitrate. Though once vilified, without justification, nitrates and nitrites are now understood to play a very active and key role in causing healthy N-O formation that constitutes to a **clean, vibrant circulatory system... The Endothelium!**

Nitric Oxide Generating Capacity	Vegetable Varieties
Very low (<20)	Artichoke, asparagus, broad bean, eggplant, garlic, onion, green bean, mushroom, pea, pepper, potato, summer squash, sweet potato, tomato, watermelon
Low (20-<50)	Broccoli, carrot, cauliflower, cucumber, pumpkin, chicory
Middle (50-<100)	Cabbage, dill, turnip, savoy cabbage
High (100-<250)	Celeriac, Chinese cabbage, endive, fennel, kohlrabi, leek, parsley
Very high (>250)	Celery, cress, chervil, lettuce, red beetroot, spinach, rocket (rucola)

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

Exercise Protects the Heart Via Nitric Oxide

Research , School of Medicine
May 4, 2011



EMORY

WOODRUFF
HEALTH
SCIENCES
CENTER

Exercise both reduces the risk of a heart attack and protects the heart from injury if a heart attack does occur. For years, doctors have been trying to dissect how this second benefit of exercise works, with the aim of finding ways to protect the heart after a heart attack.

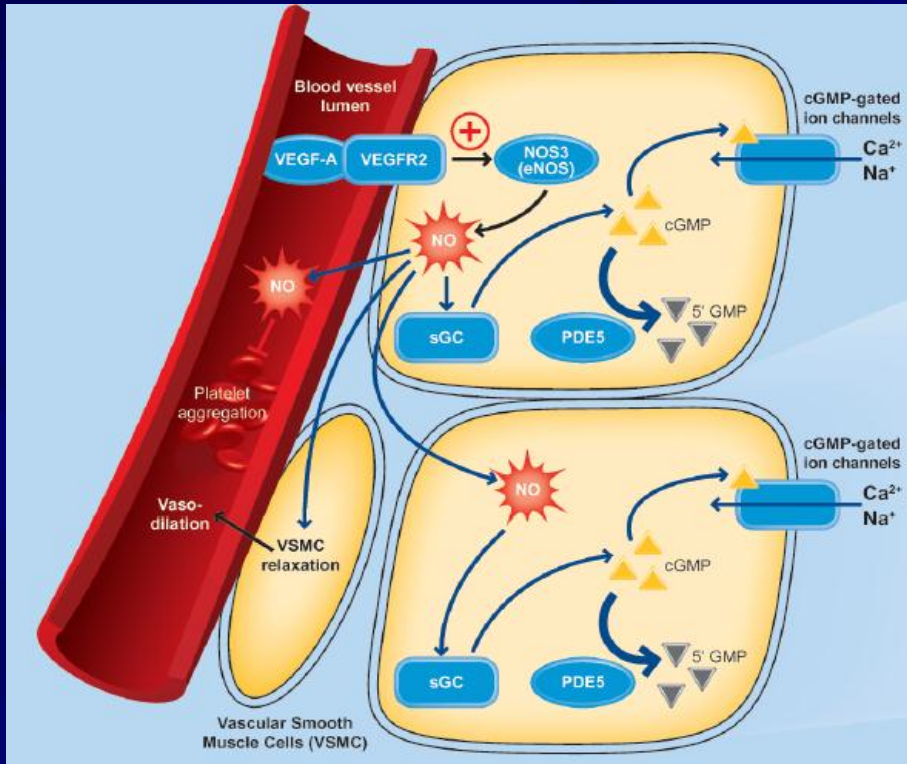
Researchers at Emory University School of Medicine have identified the ability of the heart to produce and store nitric oxide as an important way in which exercise protects the heart from injury.

Nitric oxide, a short-lived gas generated within the body, turns on chemical pathways that relax blood vessels to increase blood flow and activate survival pathways. Both the chemical nitrite and nitrosothiols, where nitric oxide is attached to proteins via sulfur, appear to act as convertible reservoirs for nitric oxide in situations where the body needs it, such as a lack of blood flow or oxygen.

In experiments with mice, the researchers showed that four weeks of being able to run on a wheel protected the mice from having a blocked coronary artery; the amount of heart muscle damaged by the blockage was less after the exercise period. Importantly, the mice were still protected a week after the wheel was taken away.

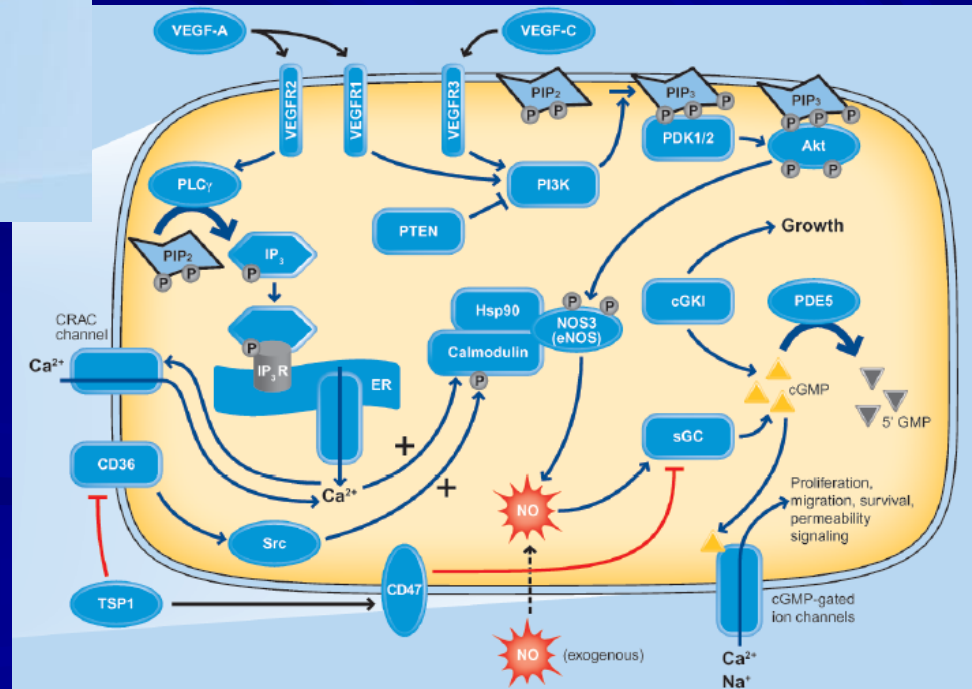


Nitric oxide (NO) signaling in endothelial cells

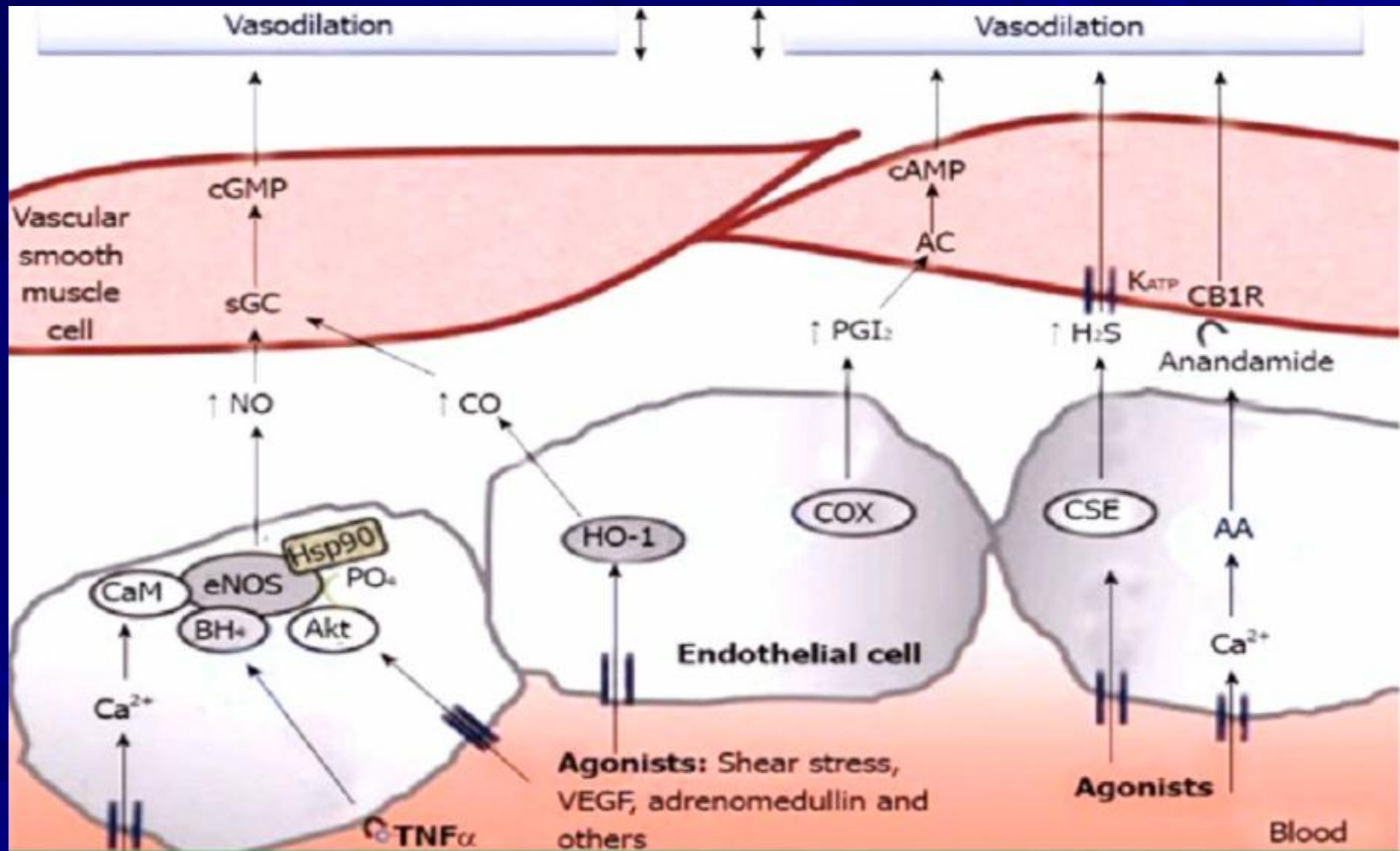


L-arginine, the source of NO is released from proteins and small peptides in the small intestine and is then absorbed, along with other amino acids into the circulation from which it is delivered to every cell in the body. Some L-arginine is metabolized for NO synthesis and some is used for protein synthesis.

In endothelial cells, the small cells that make up capillaries and line every blood vessel and lymph duct in the body, L-arginine can be converted to NO. This occurs only if the enzyme that makes NO and its cofactors are available in adequate amounts.



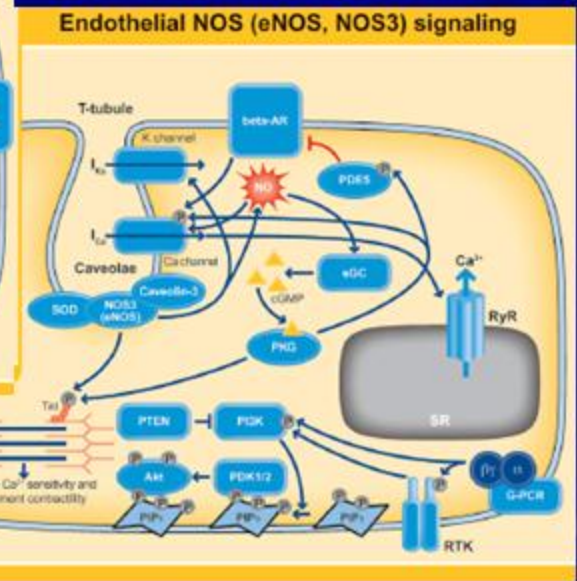
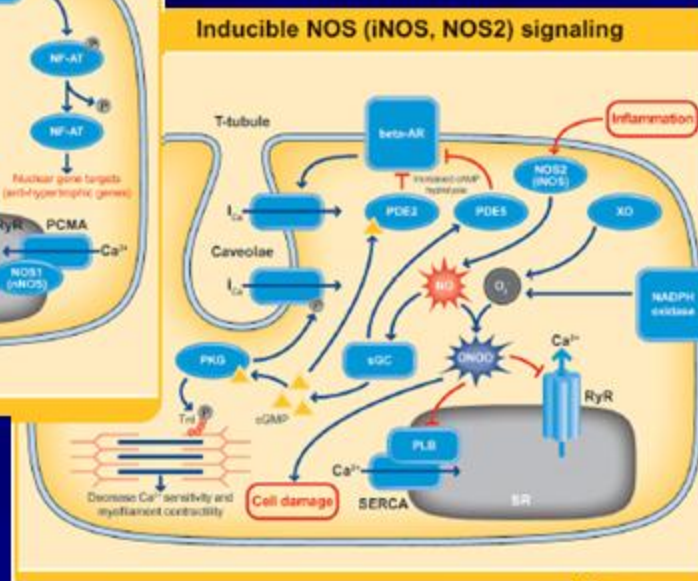
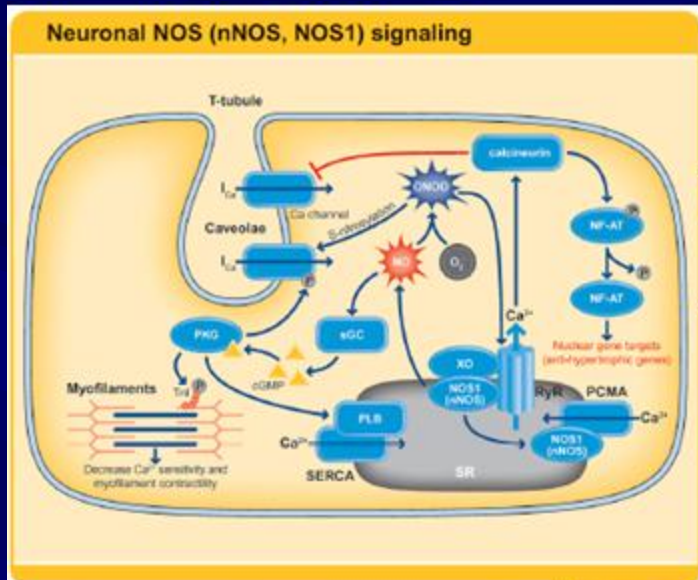
Nitric Oxide (NO) - Inducing cascades: carbon monoxide (CO), prostacyclin (PGI₂) or hydrogen sulfide (H₂S), generated through different pathways in endothelial cells, cause vasodilation in vascular smooth muscle cells.



Nitric oxide signaling in cardiomyocytes – all three forms of NOS found in cardiomyocytes produce NO involved with cGMP-dependent and cGMP-independent signaling. NO stimulates sGC, which produces cGMP.

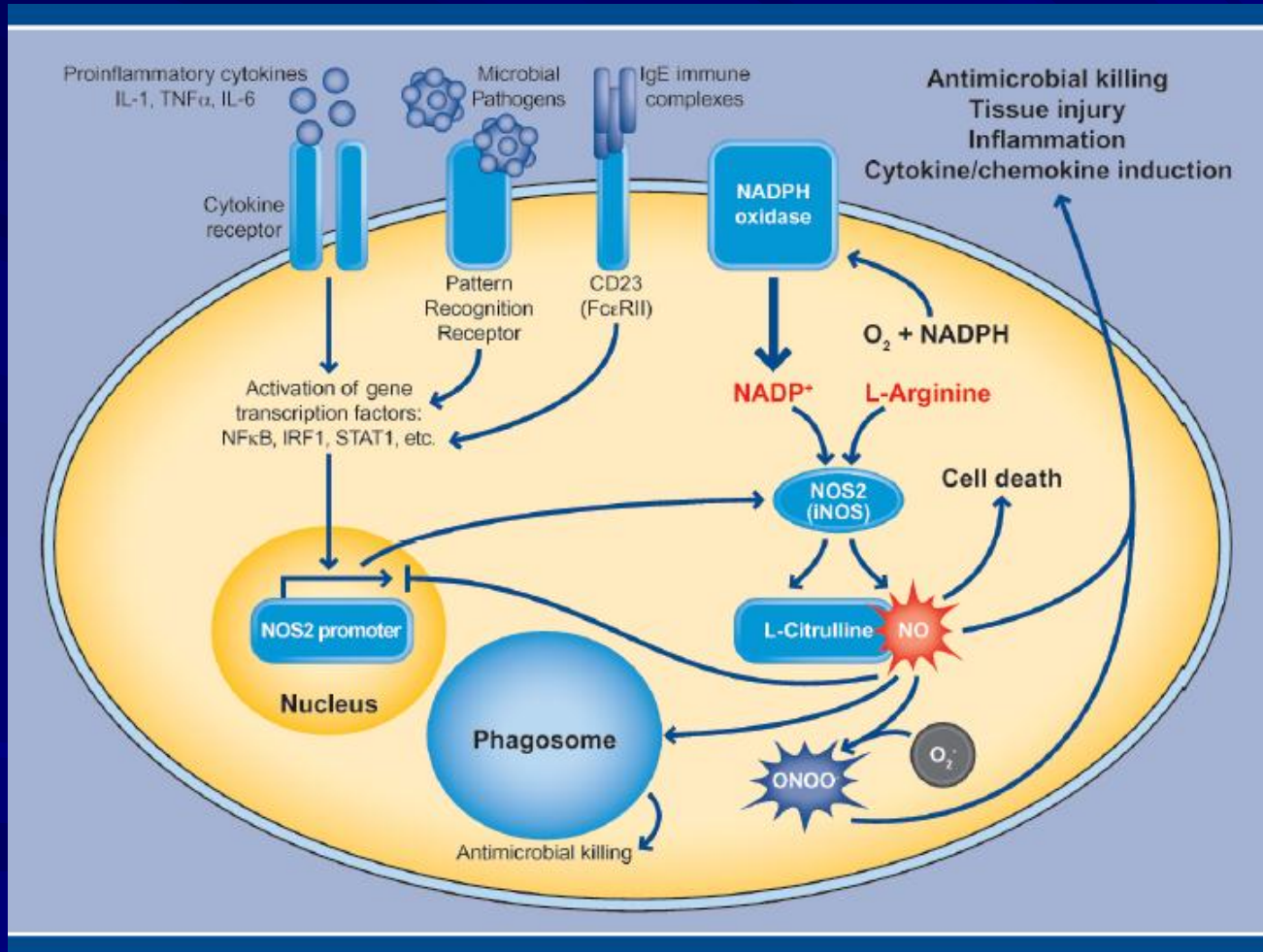
cGMP activates protein Kinase G(PKG), which activates multiple targets including

Troponin I (TnI) and L-type calcium channels.



In addition, NO produced by each isoform of NOS can react with superoxide (O₂⁻) to form peroxynitrite (ONOO⁻), a molecule that is itself *not* a free radical, but that *is* a powerful oxidant.

Nitric oxide (NO) production by phagocytes such as macrophages occurs during oxidative burst, also known as respiratory burst.

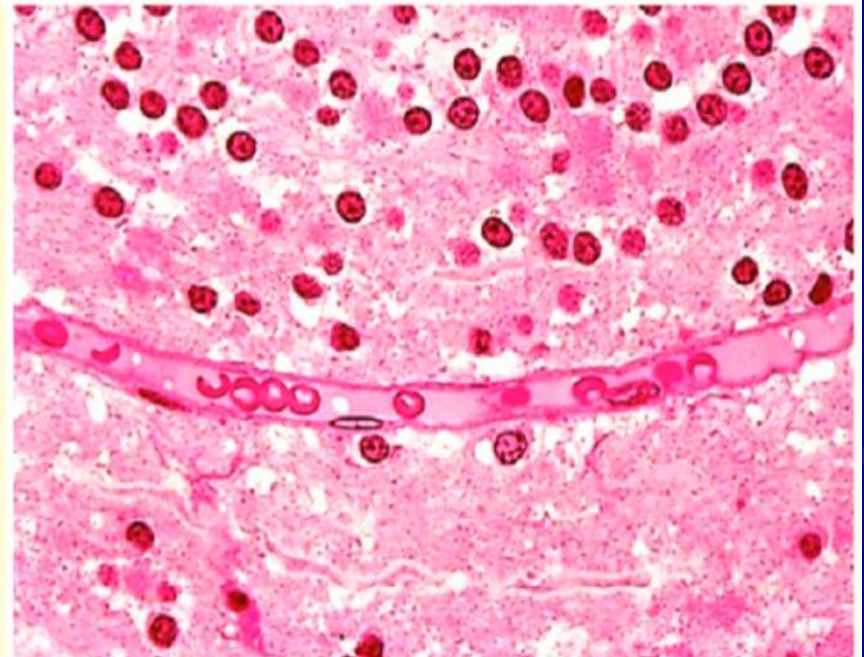
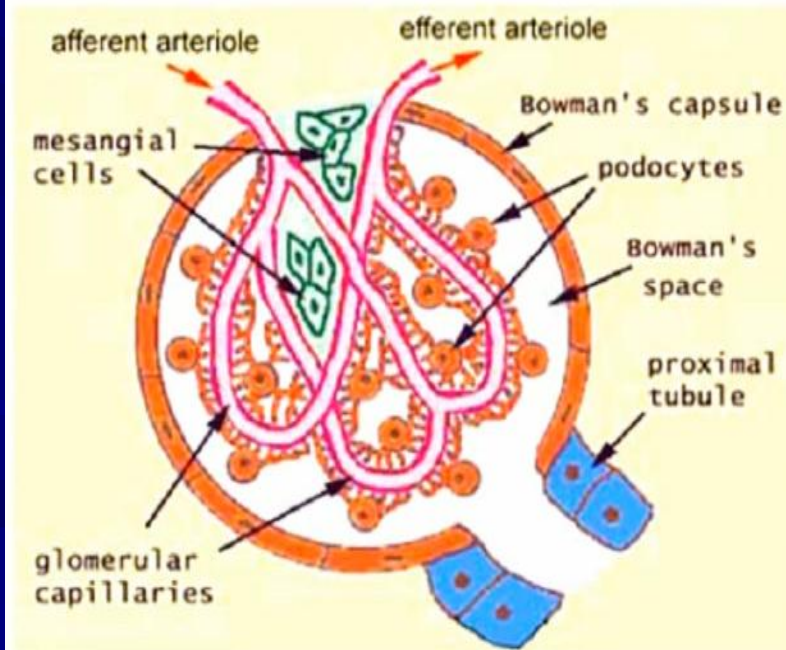


The major source of NO produced during oxidative burst comes from inducible nitric oxide (iNOS, NOS2).

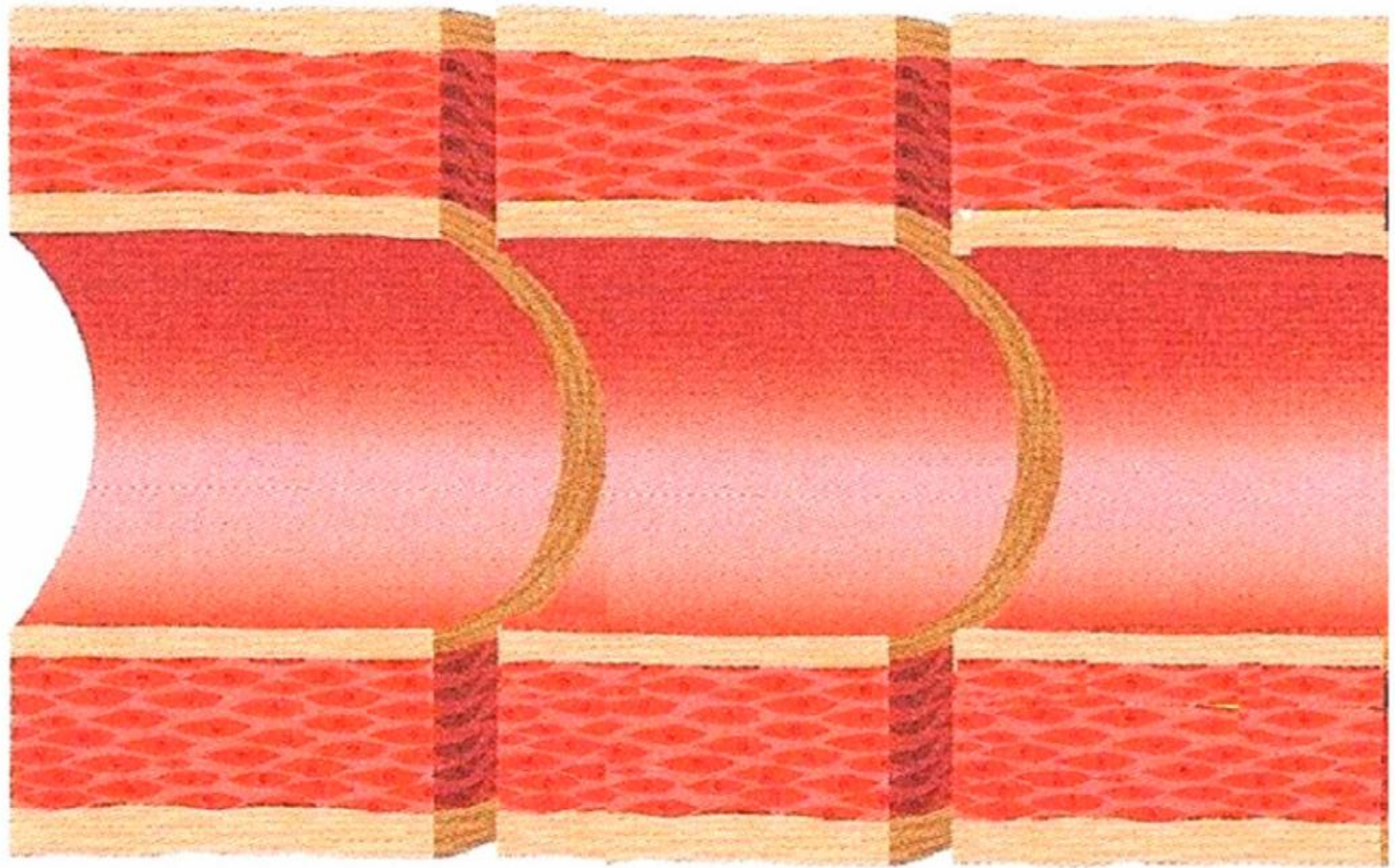
NO participates in a number of reactions, including diffusing into the phagosome to mediate anti-microbial killing, or diffusing out of the cell to neighboring cells and tissues.

Endothelium

Exchange and Transport Filtering and diffusing

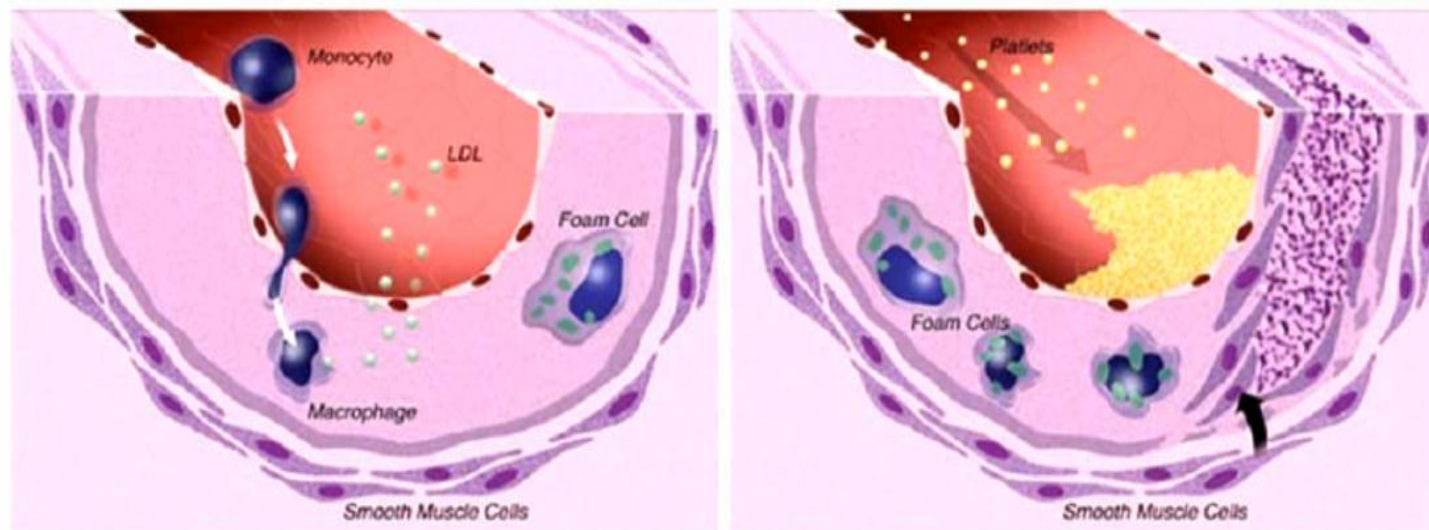


Healthy Artery and its Endothelium



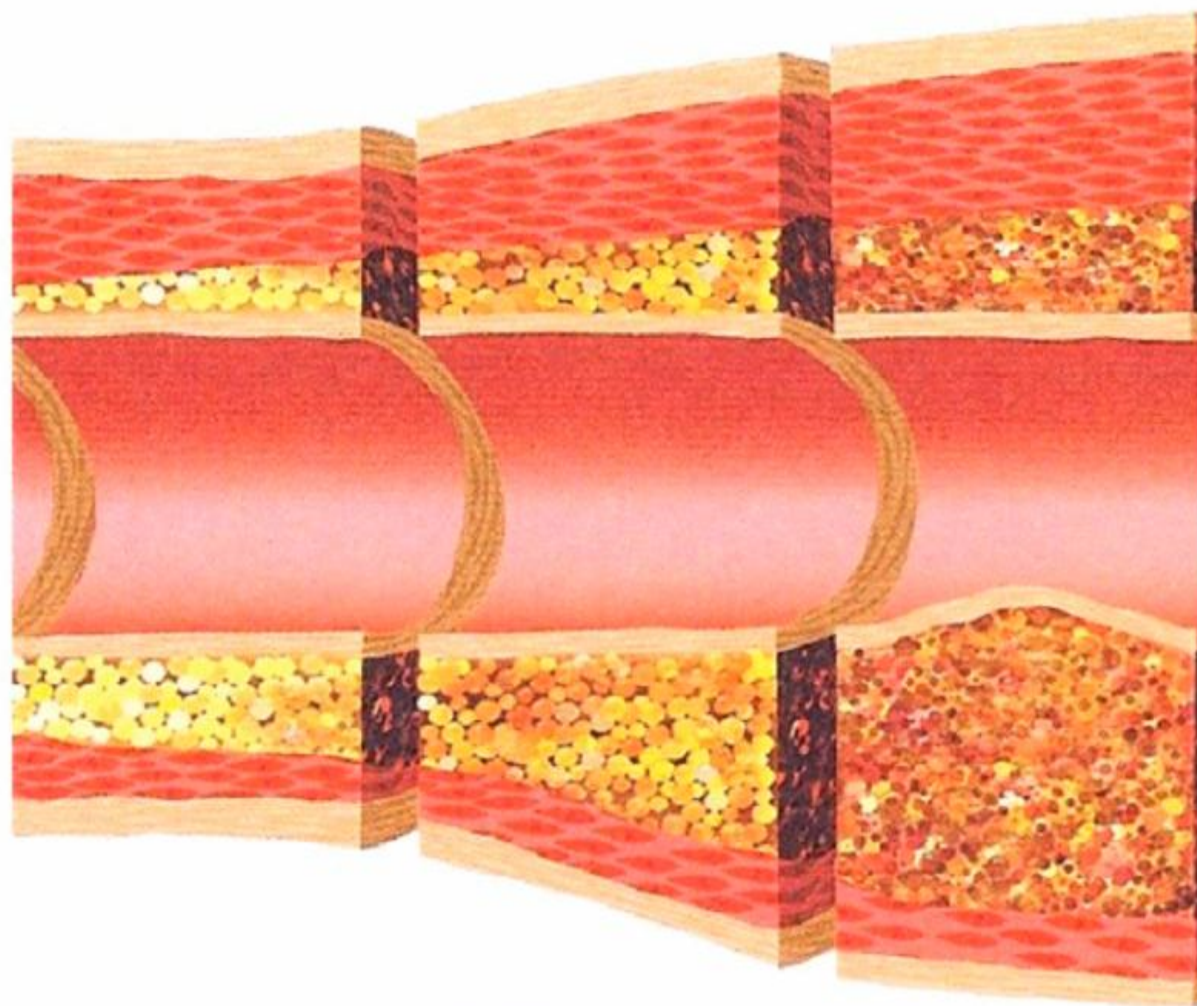
Several Risk Factor, like:

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

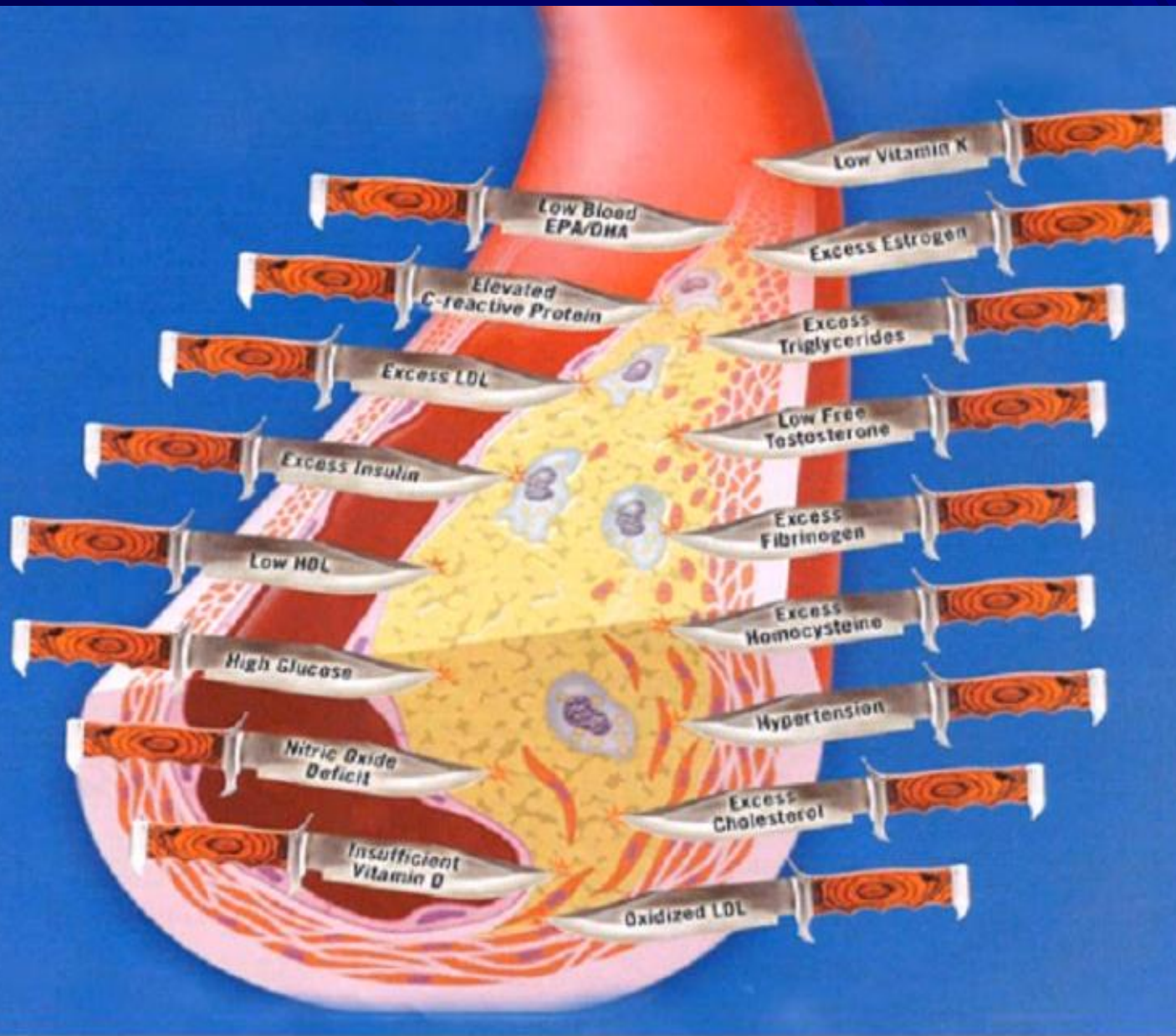


The Endothelium “Damaging Starts

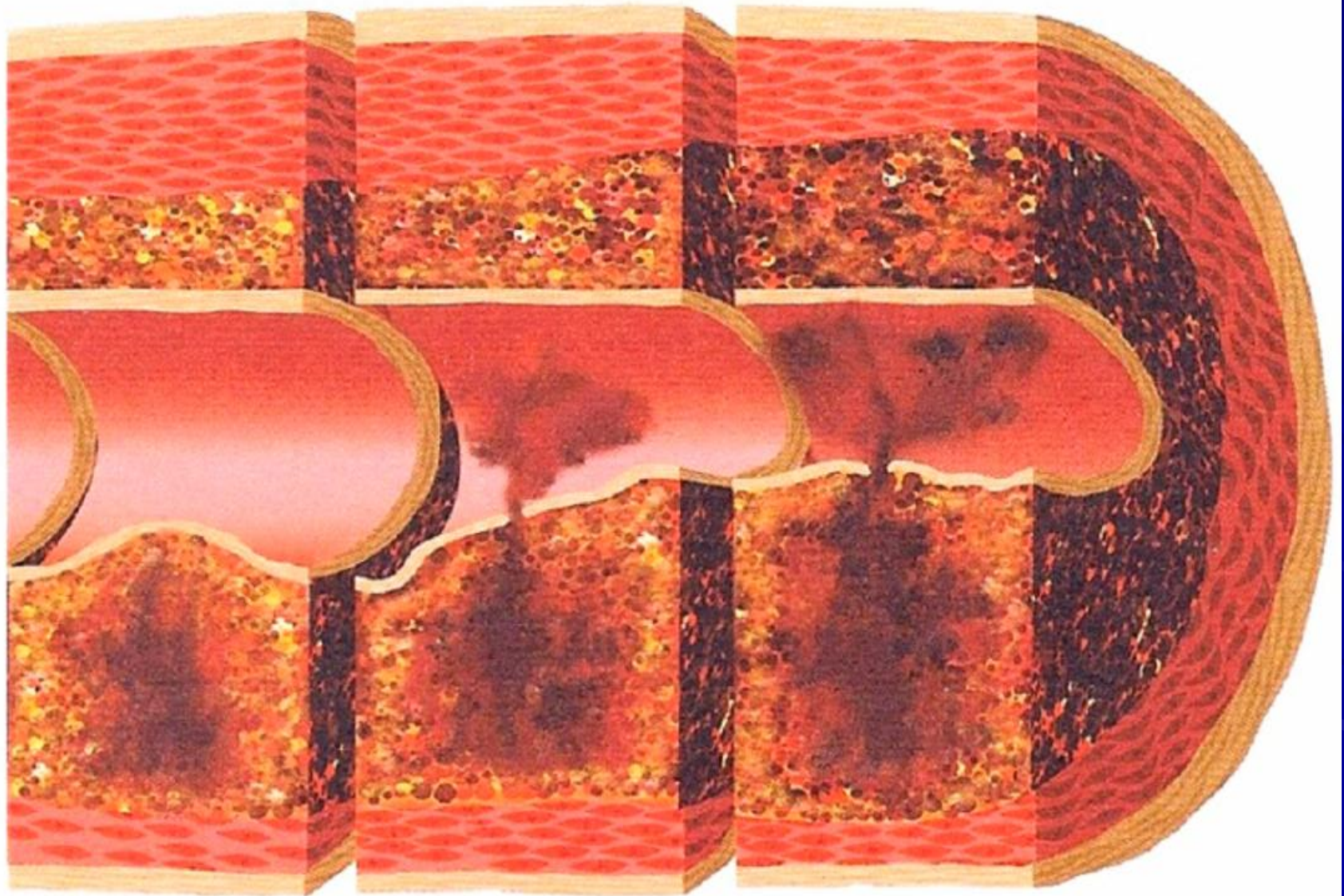
Arterial Intima starts incrementing its thickening
And THE PLAQUE formation begins



Risk Factors: Continuation of Atherosclerosis



Advanced / complicated Atherosclerotic Arterial Plaques



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.**

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.

Quantum Photonic Medicine / Therapies

PHOTON'S SOURCES

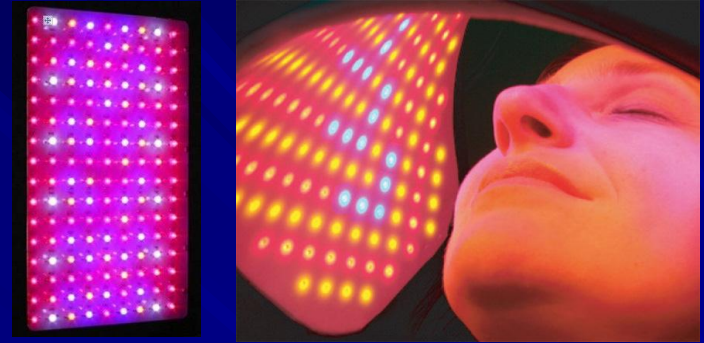
Natural
(Solar – Stellars)
Or

Artificial
(Equips)
Generators
Accelerators
Light Therapies



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."

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!

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⁻², 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.

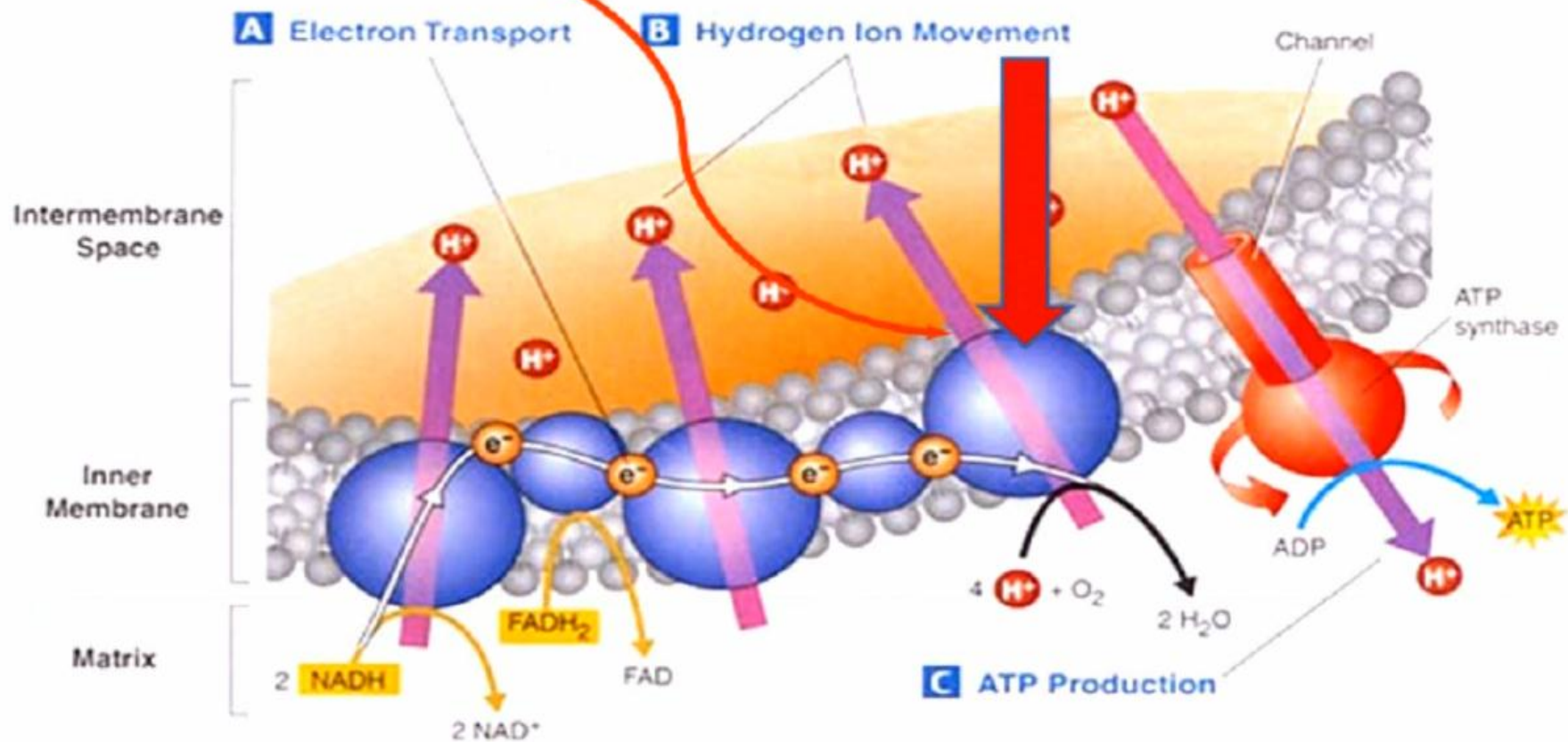
ROS production in *Staphylococcus aureus* and *Escherichia coli* as a function of wavelengths in the visible range (400–500, 500–800, 415, and 455 nm) was studied using the electron paramagnetic resonance (EPR) spin trapping technique.

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.

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 cm².

2. Clusters (shower type lasers) with *generally* three to eight 8 diodes covering larger areas, irradiating an area of 0.5 cm² 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

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 ferrocyclochrome C: oxygen oxidoreductase.

B-CURE™ LASER



Pain Reduction
Anti-Inflammation
Rapid Wound Healing
Skin Rejuvenation



- ▶ Professional Laser Power
- ▶ High Efficiency within 4.5 cm²
- ▶ Proven Clinical Results
- ▶ Light, Portable & Rechargeable

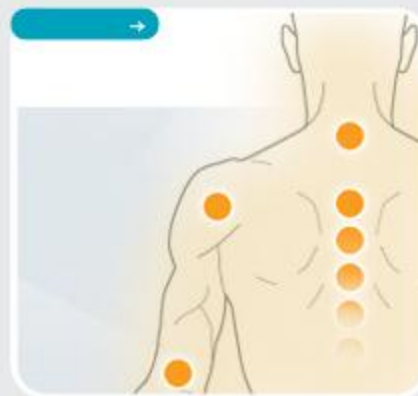
Pains & Injuries

Dermatology

Esthetics & Skin Rejuvenation

Acupuncture Treatment

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



The Power Of Healing In Your Hands

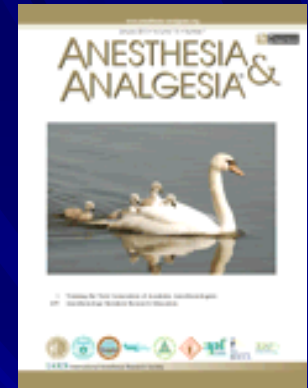
We are proud to present you with cutting edge technology in soft laser therapy: clinical soft laser power - in a light, portable, rechargeable and user friendly medical device, for the rapid, non-invasive and efficient treatment of pain, wounds, burns, sports injuries, inflammation, acne, and skin rejuvenation. 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](#) ▶

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

Acupuncture Enhances Generation of Nitric Oxide and Increases Local Circulation

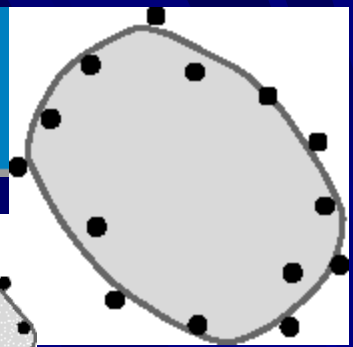
Tsuchiya M, et al. Departments of Biochemistry, Osaka City University Medical School, Abeno-Ku, Japan.



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. We studied the effects of acupuncture on local NO levels and circulation in a randomized, double-blind, crossover study with 20 volunteers, each of whom underwent one session each of real and noninvasive sham acupuncture in a single hand and forearm with a 1-wk interval between treatments.

NO concentration in the plasma from the acupunctured arm was significantly increased by 2.8 ± 1.5 micromol/L at 5 min and 2.5 ± 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

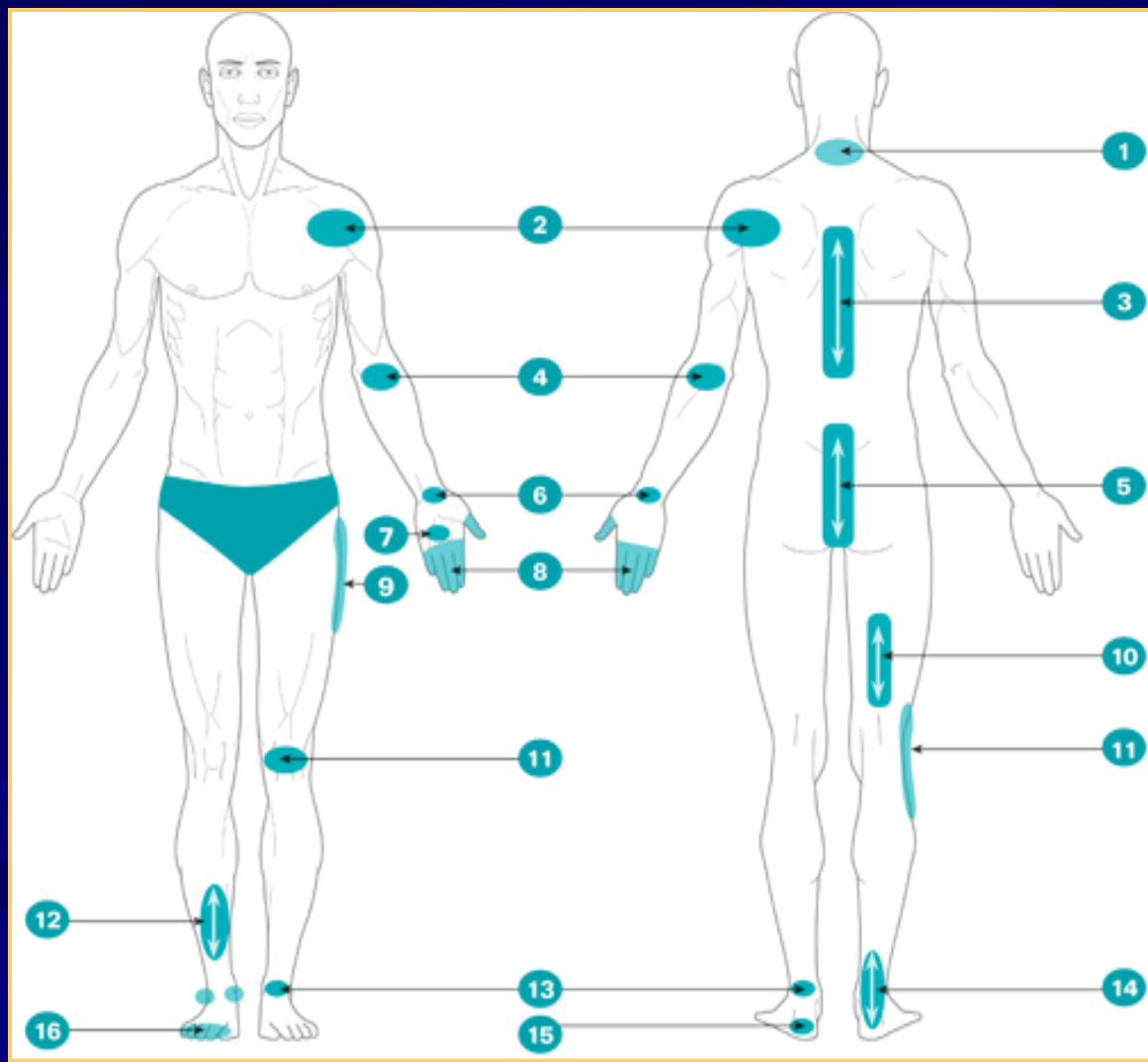
Acupuncture has long been a major component of Oriental medicine and considerable evidence supports that acupuncture is effective in the treatment of pain and various disorders.

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.

Biotechnol Lett. 2012 Jul;34(7):1175-82. doi: 10.1007/s10529-012-0892-9. Epub 2012 Mar 16.

Modulated expression of genes associated with NO signal transduction contributes to the cholesterol-lowering effect of electro-acupuncture

Li L, Tan GH, Zhang YZ.

Center for Functional Genomics and Bioinformatics, College of Life Science, Sichuan University, Chengdu, 610064 Sichuan, China. ling.li1980@gmail.com



Abstract

Electro-acupuncture (EA) at Fenglong acupoint (ST40) can lower the levels of serum cholesterol and triacylglycerols.

To study the hepatic genes responsible for the cholesterol-lowering effect of EA, suppression subtractive hybridization combined with the switch mechanism at the 5'-end of RNA template cDNA synthesis and long-distance PCR were employed using hepatic tissues from hypercholesterolemia and EA-treated mice. 68 % of the identified genes are involved in metabolism, immune response, and signal transduction pathways. Real-time PCR and western blot indicate that EA at ST40 induces the expression of nNOS and Mt1, two genes involved in NO signal transduction.

EA treatment for hypercholesterolemia thus involves the modulation of several biological pathways and provides a physiological link between NO signal transduction and the cholesterol-lowering effect of EA.

PMID: 22421970

Nitric Oxide Formation by Ultrasound in Aqueous Solutions

Vladimír Mišík and Peter Riesz

Radiation Biology Branch, National Cancer Institute, National Institutes of Health, Bethesda, Maryland

In this study we demonstrate formation of nitric oxide in aqueous nitrogen-containing solutions exposed to 50 kHz cavitation-producing ultrasound (standard bath sonicator) using electron paramagnetic resonance detection of $\bullet\text{NO}$ by trapping with the sodium *N*-methyl-d-glucamine dithiocarbamate iron(II) complex ((MGD) 2Fe^{2+}) or by measuring the conversion of the nitronyl nitroxide, 2-(4-carboxyphenyl)-4,4,5,5-tetramethylimidazoline-3-oxide-1-oxyl (carboxy-PTIO), to the imino nitroxide, 2-(4-carboxyphenyl)-4,4,5,5-tetramethylimidazoline-1-oxyl. The (MGD) 2Fe^{2+} complex which was used in most experiments was suitable for $\bullet\text{NO}$ detection over a wide pH range (pH 3–7.8; the working range for carboxy-PTIO was pH 6–8.5), and the measured rate constant of (MGD) 2Fe^{2+} reaction with $\bullet\text{NO}$ was 2.3 times higher than for carboxy-PTIO. In air-saturated water the rate of $\bullet\text{NO}$ production by ultrasound was 0.5 $\mu\text{M}/\text{min}$.

The presence of dissolved oxygen was not essential for production of $\bullet\text{NO}$; the highest yields of $\bullet\text{NO}$ (1.2 μM $\bullet\text{NO}/\text{min}$) were found under an atmosphere of 40% N_2 and 60% argon. The formation of $\bullet\text{NO}$ by ultrasound in aqueous solutions can be understood in terms of combustion chemistry-type reactions occurring inside the “hot” collapsing cavitation bubbles. We also show that other N-containing molecules can serve as a source of nitrogen for $\bullet\text{NO}$ production. **The possibility of ultrasound-mediated $\bullet\text{NO}$ formation to alleviate hypoxia of tumors should be explored.**

Ultrason Sonochem. 2006 Jul;13(5):397-400. Epub 2005 Sep 15.

Ultrasound liberates nitric oxide (NO) from the caged NO compound N,N'-bis(carboxymethyl)-N,N'-dinitroso-p-phenylenediamine sodium salt.

Feril LB Jr, Kondo T.

Department of Radiological Sciences, Faculty of Medicine, Toyama Medical and Pharmaceutical University, 2630 Sugitani, Toyama 930-0194, Japan.

Abstract

To determine whether nitric oxide (NO) can be released from a cage compound N,N'-bis(carboxymethyl)-N,N'-dinitroso-p-phenylenediamine sodium salt (BNN 5 Na), we sonicated different concentrations of BNN 5 Na solutions containing an NO spin trap, (MGD)₂Fe²⁺, and then measured (MGD)₂Fe²⁺-NO signal using electron paramagnetic resonance (EPR).

We also investigated the role of cavitation by saturating the solutions with Ar, He or Xe gases before sonication. The result showed that ultrasound can liberate NO from caged NO compound at rates highest with Xe and lowest with He. These results suggest that high-temperature due to cavitations induced by ultrasound are capable of releasing NO from caged NO compounds.

This finding also opens up to a new **possibility for the use of ultrasound in controlled release of active compounds (e.g. drugs, supplements) from caged forms for therapeutic purposes.**

PMID: 16168699

Ultrasound Med Biol. 2006 May;32(5):769-75.

Comparison of ultrasound and pulsed electromagnetic field effects on osteoblast growth.

Li JK, Lin JC, Liu HC, Sun JS, Ruaan RC, Shih C, Chang WH.

Center for Nano Bioengineering, Chung Yuan Christian University, Chung Li, Taiwan, Republic of China.



Abstract

This study compares the mechanisms of ultrasound (US) on osteoblast proliferation with those of pulsed electromagnetic field (PEMF), by different signal transduction pathway inhibitors. The cells were stimulated for 15 min under US or for 2 h under PEMF exposure. Twenty-four h after the beginning of stimulation, the cells were harvested and used for mitochondrial activity test (MTT) analysis.

The results showed that there are different transduction pathways for US and PEMF stimulation that lead to an upgrade of osteoblast proliferation, although their pathways all lead to an increase in cytosolic Ca²⁺ and activation of calmodulin. These findings offer a biochemical mechanism to support the process of ultrasound and PEMF-induced enhanced healing of bone fractures.

PMID:16677936

<http://www.ncbi.nlm.nih.gov/pubmed/16677936>

PEMF Therapy and Nitric Oxide Production

Many cells in the body produce nitric oxide; however, its production by the vascular endothelium is particularly important in the regulation of blood flow. Abnormal production of nitric oxide, as occurs in different disease states, can adversely affect blood flow and other vascular functions. Nitric oxide is one of the few gaseous signaling molecules known and is additionally exceptional due to the fact that it is a radical gas. It is a key vertebrate biological messenger, playing a role in biological processes.

The March/April 2009 Aesthetic Surgery Journal published a study:

“Evidence-Based Use of Pulsed Electromagnetic Field Therapy in Clinical Plastic Surgery” that summarizes the evolution in the understanding of the physiological effects of PEMF therapy on cells and tissues.

Studies emerged suggesting that PEMF could modulate the production of growth factors and began to focus on enzyme systems with well-characterized calcium (Ca²⁺) dependence.

Why Do We Need Magnetism?

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 to the natural 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.

The Earth's 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.



Depression and Earth's weakening Magnetic Field

Earth's declining magnetic field may be one of the factors leading to the alarming rise in cases of clinical depression and suicide.

In 2008, Russian scientists found a correlation between Earth's declining magnetic field and suicide. Oleg Shumilov of the Institute of North Industrial Ecology Problems in Russia, told the New Scientist the Earth's magnetic field peaked in three cycles during the year; March to May, another in July with the last in October. Shumilov argues that many animals can sense the magnetic field, so why should this not be the case with humans?

Michael Rycroft, formerly head of the European Geosciences Society, quoted by the New Scientist, claims that around 10 to 15% of the population are affected by geomagnetic health problems.

Dementia, depression and mental disorders are on the rise worldwide. If it turns out Earth is entering a new phase of accelerated field declination, which I believe it is, and artificially induced electro-magnetic field disturbances continue on Earth; depression and rates of suicide on the planet could start spiking.



Transcranial Magnetic Stimulation (TMS) A Cure for Depression?



Dr. Oz investigates 'Transcranial Magnetic Stimulation', or TMS, a groundbreaking therapy for depression that's both noninvasive and FDA approved.

TMS is thought to help correct electrical signaling and chemical imbalances in the brain that trigger depression.

In transcranial magnetic stimulation (TMS), magnetic fields are sent through the scalp and skull to a particular area of the brain. When the magnetic field enters the brain it creates a small electrical current. This electrical current stimulates the brain cells (neurons) in a targeted brain area and causes them to fire (or send an electrical impulse).



Brainsway Deep TMS Transcranial Magnetic Stimulation System FDA Cleared to Treat Depression

by Gene Ostrovsky – Jan 9, 2013

Jerusalem, Israel based Brainsway finally won FDA clearance for its Deep TMS (transcranial magnetic stimulation) to be **used for treatment of drug resistant depression.**



The Brainsway system received a similar approval in Europe three years ago and is also being **used there to control neuropathic chronic pain.** Additionally, the technology is being **trialed for a variety of conditions like Alzheimer's and bipolar disorder, and even for smoking cessation.**

The company adds that the FDA approval for this indication is generally broader than the definition given by the company's TMS device rival. Brainsway said that the FDA certification of the Deep TMS device for use in the US for such a broad indication is further demonstration of the device's efficacy and safety in treating depression, and could be an important milestone in changing the treatment for depression.

Alzheimer's disease: improvement of visual memory and visuoconstructive performance by treatment with picotesla range magnetic fields.

Sandyk R.

NeuroCommunication Research Laboratories, Danbury, CT 06811.

Abstract

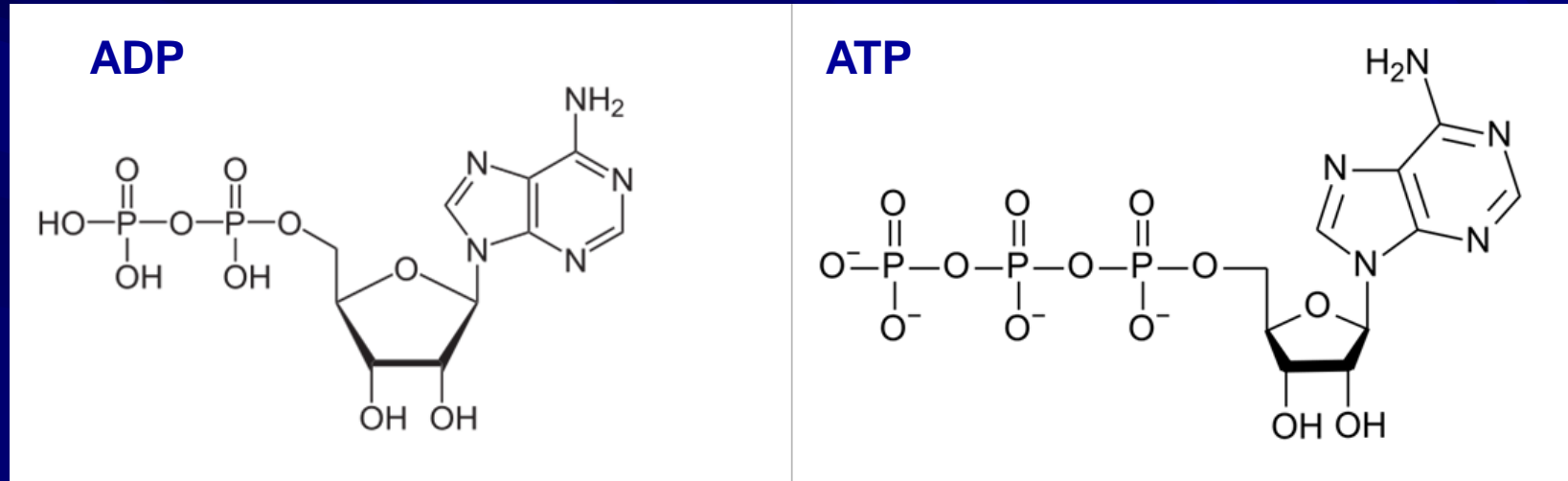
Impairments in visual memory and visuoconstructive functions commonly occur in patients with Alzheimer's disease (AD). Recently, I reported that external application of electromagnetic fields (EMF) of extremely low intensity (in the picotesla range) and of low frequency (in the range of 5Hz-8Hz) improved visual memory and visuoconstructive functions in patients with Parkinson's disease. Since a subgroup of Parkinsonian patients, specifically those with dementia, have coexisting pathological and clinical features of AD, I investigated in two AD patients the effects of these extremely weak EMF on visual memory and visuoconstructive performance.

Treatment with EMF resulted in a dramatic improvement in visual memory and enhancement of visuoconstructive performance which was associated clinically with improvement in other cognitive functions such as short term memory, calculations, spatial orientation, judgement and reasoning as well as level of energy, social interactions, and mood. The report demonstrates, for the first time, that specific cognitive symptoms of AD are improved by treatment with EMF of a specific intensity and frequency.

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.



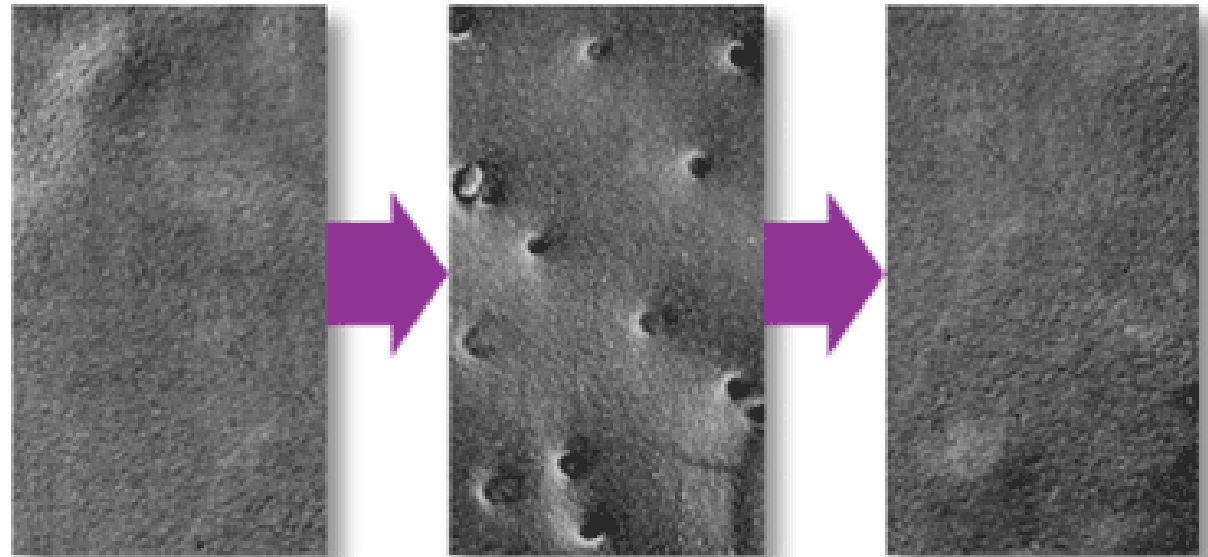


PEMF induces Electro-poration – Increasing Cellular (TMP) Transmembrane Potential

Applied 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.

The phenomenon of electroporation



Cell membrane before pulsing

Cell membrane during pulsing

Cell membrane after pulsing (cell returns to

- *Controlled, millisecond electrical pulses induce temporary pores in the cell membrane*
- *Cell membrane reseals and is left unharmed*

Biochem Biophys Res Commun. 2006 May 5; 343(2): 351–360

Nanosecond pulsed electric fields cause melanomas to self-destruct

Richard Nuccitelli, Uwe Pliquet, Xinhua Chen, Wentia Ford, R. James Swanson, Stephen J. Beebe, Juergen F. Kolb, and Karl H. Schoenbach



We have discovered a new, drug-free therapy for treating solid skin tumors. Pulsed electric fields greater than 20 kV/cm with rise times of 30 ns and durations of 300 ns penetrate into the interior of tumor cells and cause tumor cell nuclei to rapidly shrink and tumor blood flow to stop. Melanomas shrink by 90% within two weeks following a cumulative field exposure time of 120 μ s. A second treatment at this time can result in complete remission. This new technique provides a highly localized targeting of tumor cells with only minor effects on overlying skin.

Electric fields have been employed in several different types of cancer therapy. Some of these involve radiofrequency or microwave devices that heat the tumor to greater than 43 °C to kill the cells via hyperthermia [1,2]. Others use pulsed electric fields to permeabilize the tumor cells to allow the introduction of toxic drugs or DNA [3–5].

We have discovered that ultrashort electrical pulses can be used as a purely electrical cancer therapy that kills tumors *without* hyperthermia or drugs.

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 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.**

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



U.S. National Library of Medicine
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 ≥ 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 ± 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

Who Needs to Detoxify?

We have learned that toxicity in the body is the primary culprit of most of the diseases present today.

Conditions like **diabetes**, cancer, **obesity**, asthma, ADD and ADHD, Autism, arthritis, fibromyalgia, multiple sclerosis, heart disease, and many others should be proof enough for the need to detoxify.

**Every man, woman, child
and animal needs daily detoxification,
as we are *all toxic!***

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⁺ K⁺ pump function
which leads to ↑ charge of the cell
wall and ↑ metal excretion.

Dr. Garry Gordon's F²IGH²T For Your Health Program

F² = 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

H² = 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.

E² = Energy and Exercise - PEMF or pulsed electromagnetic frequency therapy that promotes healing through

Magnetically Induced Cellular Exercise, or MICE



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.

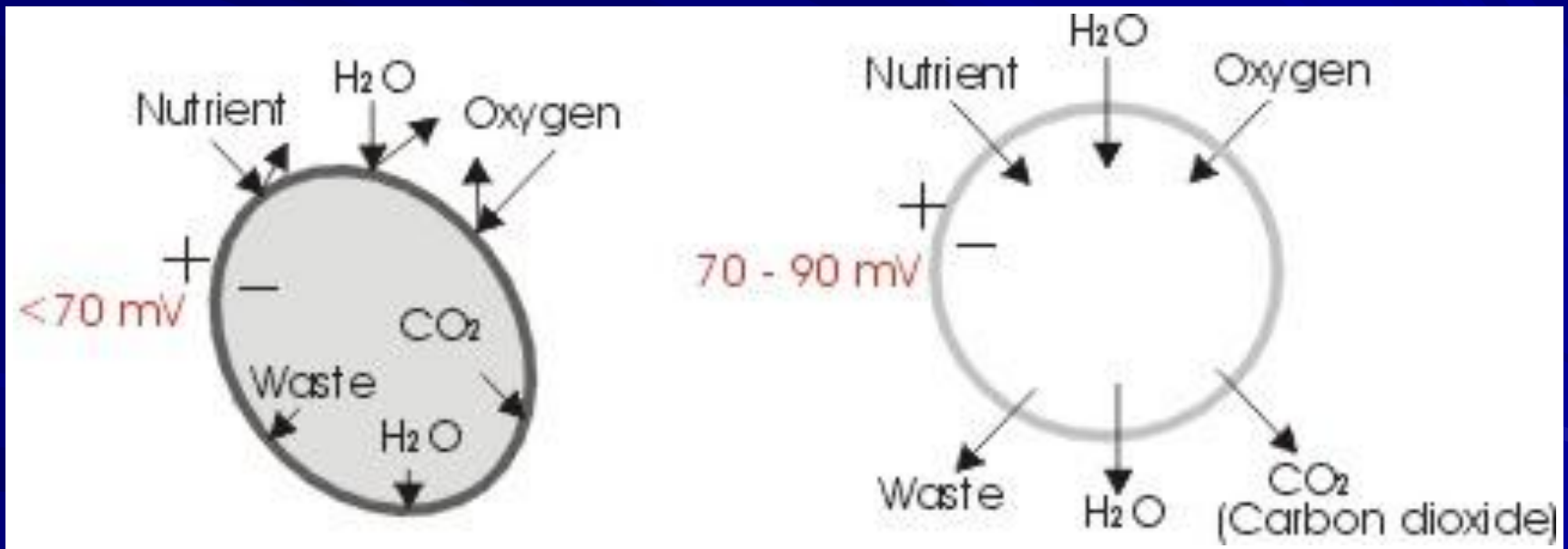
Studies have demonstrated that connecting the human body to the earth during sleep (earthing) normalizes the daily cortisol rhythm and improves sleep. It is also suggested that free electrons from the earth neutralize the positively charged free radicals that are the hallmark of chronic inflammation. 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⁺/K⁺-ATPase** to enhance **Na⁺/K⁺ pump** and to maintain the cell potential at 70 – 90 mV.

Increasing cellular energy and membrane potential assists in uptake of oxygen, H₂O, anti-oxidants and other critical nutrients into the cell...while toxins, cellular waste and carbon dioxide are purged.



Low energy "sick" cell <math>< 70 \text{ mV}</math>

Normal healthy cell = 70-90 mV

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

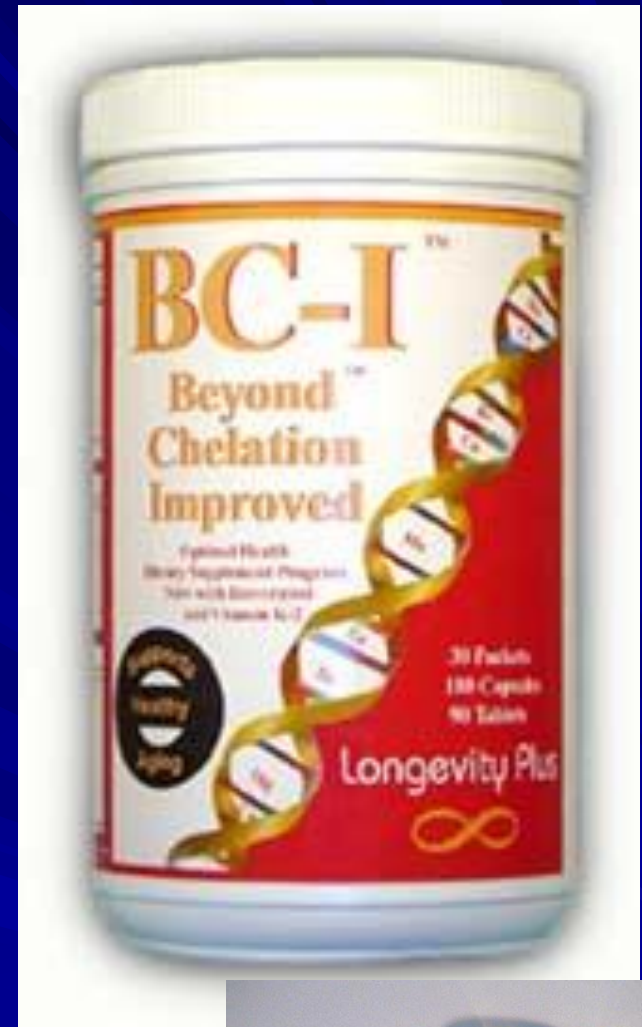
Imbalance between reactive oxygen species generation and antioxidant capacity induces a condition known as oxidative stress which is implicated in numerous pathological processes. In this study we evaluated whether natural zeolites (chabazite/phillipsite/analcime) may affect the levels of different antioxidant 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.

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.



REMEDIES; Growth Hormone: The Secret of Youth or a Cautionary Tale?

By BONNIE DESIMONE
Published: April 11, 2006

The New York Times

SIXTEEN years ago, a small-scale study of human growth hormone therapy among older men opened a large debate in the medical community over whether it could stave off physical decline.

Demands for prescriptions have increased, as has online demand for both legitimate and fraudulent forms of the product, known as **HGH** -- eventually growing into an estimated \$1 billion global market.

Because evidence shows potentially harmful side-effects, most mainstream doctors caution against using **HGH**, except in strictly delineated cases. Other doctors say it is an effective anti-aging weapon.

Beyond GHS

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



Growth Hormone Herbal Blend – stimulates NO generation

In addition to resveratrol, chromium picolinate and arginine, contains herbal complex made up from whole plant extracts of tribulus terrestris, schizandra, licorice and moomiyo, designed to maximize the output and anabolic (skeletal muscle growth) effects of IGF-1 (insulin like growth factor -1) and to reduce body fat (catabolic effects).



Tribulus terrestris is a herb that has been used in the traditional medicine of China and India for centuries. Research performed in Bulgaria and Russia indicates that tribulus increases levels of the 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.



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 μ /ml ($p < 0.05$) whereas higher concentration (100 μ g/ml) suppressed the growth of such cells. The maximal proliferative effect of this extract was achieved at 50 μ g/ml which is higher than the effect displayed by 0.1 nM E₂.

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

Effects of Pueraria mirifica on vascular function of ovariectomized rabbits.

Wattanapitayakul SK, Chularojmontri L, Srichirat S.

Department of Pharmacology, Faculty of Medicine, Srinakharinwirot University, Sukhumvit 23, Wattana, Bangkok 10110, Thailand. suvara@swu.ac.th



Estrogen stimulates endothelial nitric oxide (NO) production and attenuates endothelial dysfunction in ischemia/reperfusion and menopause. Recent studies have shown that phytoestrogens from dietary sources improve endothelial function and reduce cardiovascular risks. The Thai medicinal plant Pueraria mirifica (PM) contains many potent phytoestrogens including miroestrol and deoxymiroestrol but no study on vascular function has been established. Ground powder of PM was orally given to ovariectomized White New Zealand rabbits (OVX + PM group) (n = 4) weighing 3.2-4.0 kg at the dose of 100 mg/kg for 90 days. Saline-treated ovariectomized rabbits were assigned as a control group (OVX group) (n = 5). In addition to vascular study, the authors found no significant alteration in serum cholesterol, LDL, triglyceride, HDL, ALT AST alkaline phosphatase, and lipid peroxidation in OVX + PM rabbits.

These data demonstrate that PM (100 mg/kg/d) improved endothelial function through NO-dependent pathway and increased response to E2 while sensitivity to NE was reduced. In addition, it had no impact on lipid profile, liver enzymes, and ALP activities. PM is a potential source of phytoestrogens for postmenopausal women to improve cardiovascular function or reduce cardiovascular risks.



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.

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)



HOW TO REGROW A SEVERED FINGER

1 Start to make 'pixie dust' by cutting open a pig's bladder and flattening it out.



2 Scrape away the layer of muscle before 'cleaning' the remaining collagen-rich tissue by shaking it in acid.

3 Dry out the paper-like 'extra-cellular matrix' and grind into powder form.

4 Regularly sprinkle powder on severed finger tip.



5 Within a few weeks, tip grows to normal length, complete with nail and 'fingerprint'.



Future Medicine Human Tissue Regeneration

Lee Spievack, a model aircraft enthusiast from Cincinnati in the U.S. who, in 2005, accidentally sliced an inch off the tip of his index finger with a model aeroplane propeller.

A collagen powder derived from pigs' bladders, appeared to provide a suitable "matrix" or framework, stimulating regrowth of the tissues and division of the cells, to enable Mr Spievack's finger to grow back - in just a month - flesh, tendon, skin, fingernail, fingerprints and all!

Dr Stephen Badylak of the University of Pittsburgh is the scientist who developed the pixie dust. It consists of a mixture of protein and connective tissue which is already used by surgeons to repair tendons.

DISCOVER - JULY-AUGUST 2011 ISSUE

How Pig Guts Became the Next Bright Hope for Regenerating Human Limbs

A remarkable substance extracted from pigs enables the body to regenerate lost tissue, including fingertips and big chunks of muscle... And that may not be all it can do...

It's called "pixie dust", made from part of a pig's bladder known as the extracellular matrix, or ECM, a fibrous substance that occupies the spaces between cells.

ECM contains powerful proteins that can reawaken the body's latent ability to regenerate tissue.

The doctors kept telling Hernandez he would be better off with an amputation. Flying bomb debris had ripped off nearly 70 percent of Hernandez's right thigh muscle. A paper-thin slice of ECM was grafted into his thigh, and something miraculous began to happen... Muscle that most scientists would describe as gone forever began to grow back. Hernandez's muscle strength increased by 30 percent from what it was before the surgery, and then by 40 percent. It hit 80 percent after six months. Today it is at 103 percent—as strong as his other leg.

Badylak's Biodome sleeve - by adding growth factors, liquids such as water and amniotic fluid, and varying electric currents, he and his colleagues are replicating the conditions that exist in a human embryo—an environment that is perfectly conducive to the transformation of stem cells into the complex tissues that make up a body.



Aging Ills Reversed in Mice

Scientists Tweak a Gene and Rejuvenate Cells, Raising Hopes for Uses in Humans

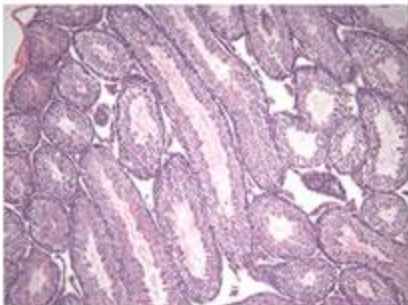
The research team led by Dr. Ronald DePinho of Dana Farber Cancer Institute made genetically engineered mice that aged prematurely.

The animals had short, dysfunctional telomeres and suffered a range of age-related problems, such as:

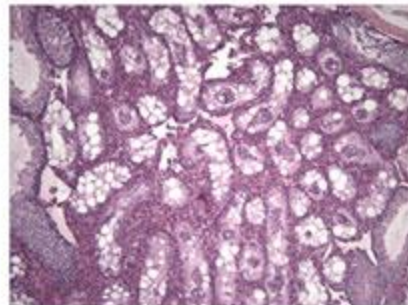
- atrophied spleens
- intestinal damage
- impaired sense of smell
- shrunken brains
- shrunken testes, depleted sperm count.
- Their telomeres had lengthened and the levels of telomerase increased, waking dormant brain stem cells, producing new neurons. **The mice spleen, testes and brains were rejuvenated and grew in size.**



Two mice involved in an experiment on age-related degeneration. Mouse on left, whose telomerase gene was activated, showed notable improvements.



aged testicular tissue



telomerase activated

TACT - Trial to Assess Chelation Therapy



The National Heart, Lung, and Blood Institute (NHLBI) and the National Center for Complementary and Alternative Medicine (NCCAM), both components of the National Institutes of Health (NIH), are sponsoring the Trial To Assess Chelation Therapy (TACT). TACT is the first large-scale, multicenter study to determine the safety and efficacy of EDTA chelation therapy for individuals with coronary artery disease.

Update: TACT has completed enrollment. Participants will continue to be followed through 2011, and the results will be analyzed in 2012.

This placebo-controlled, double-blind study includes more than 1,600 participants aged 50 years and older with a prior myocardial infarction (heart attack) to test whether EDTA chelation therapy and/or high-dose vitamin therapy is effective for the treatment of CAD.

This study, with a total cost of approximately \$30 million, is over 20 times larger than any previous study of chelation therapy. It is designed to be large enough to detect if there are any mild or moderate benefits or risks associated with the therapy.



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.



Neo40™ Daily

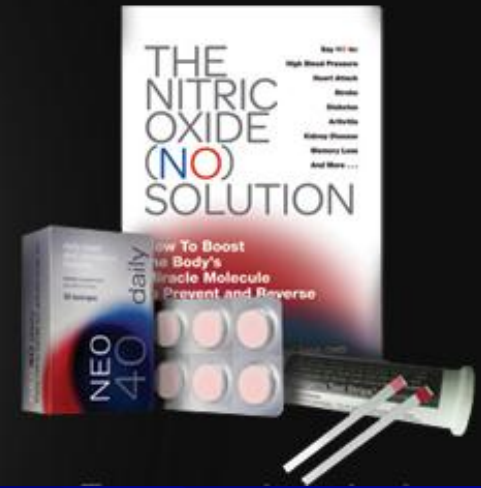
Safe and Natural lozenges. Restore your body's natural ability to produce Nitric Oxide.

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

Neo40® Daily can help.

[Learn more](#) 

Dr. Edward Chafizadeh
Cardiologist



Nitric Oxide Diagnostics™ Test Strips

Easy to test your Nitric Oxide level daily

Available for purchase at Amazon.com... keyword: nitric oxide test strip



PRINCIPLES AND APPLICATIONS OF
OZONE THERAPY
A PRACTICAL GUIDELINE FOR PHYSICIANS

FRANK SHALLENBERGER, M.D., HMD, ABAAM

Dr. Frank Shallenberger, an emergency room specialist, first became interested in ozone therapy. His years of successful experience with it in a wide variety of medical conditions compelled him to discover how and why the therapy works so well.

Ozone is a highly reactive form of oxygen. So he theorized that it works by enhancing the utilization of oxygen in the cells. In order to determine if he was on the right track, he developed a system which uses an FDA approved pulmonary gas analyzer to measure oxygen utilization.

He discovered two unsuspected findings:

- First, **many people, even those who feel great, are in a state of decreased oxygen utilization.** They have plenty of oxygen in their bodies, but they are not using it efficiently.
- Second, **ozone therapy tends to correct this condition.**

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.

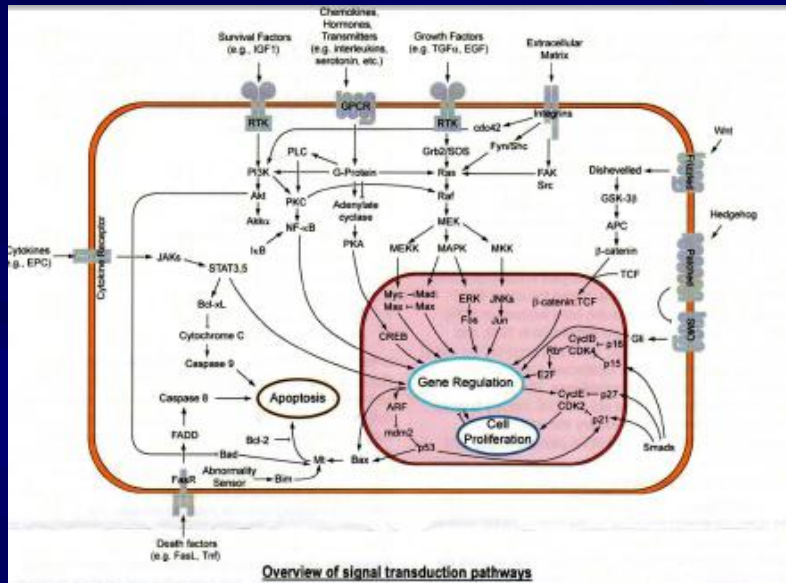
Dr. Curtis Ficenece, DC
Fargo, ND

[Register Now!](#)

<http://www.pulse4life.com/>

Pulsed Electro-magnetic Frequency (PEMF) Therapy

“How It Works”



In the chronic pain state, pain signal generation can actually occur in the central nervous system without peripheral noxious stimulation. In pain management, modulation of the pain signal transmission is a far better choice than neural destruction, and that can be achieved with PEMF. Scientific evidence shows that acute persistent pain eventually sensitizes wide dynamic neurons in the dorsal horn of the spinal cord, the wind-up phenomenon, constituting the basis of developing chronic pain syndromes (Kristensen, 1992). Persistent and excessive pain has no biological good or necessary function. It is actually harmful to our well-being. Therefore, pain needs to be treated as early and as completely as possible and not to be left alone (Adams, et al 1997). The primary symptom in most patients with disorders affecting the soft tissue is pain. In many patients, daily activities are limited as pain causes a restriction of the range of movements. Causes of soft tissue pain can be depicted as musculo-skeletal, neurologic, vascular, and referred visceral-somatic or articular (Calliet, 1997). Early reports of applying electrical current to treat pain date back to before 1800 (Ersek, 1981). PEMF therapy has successfully been used for the control of pain associated with rotator cuff tendonitis, multiple sclerosis, carpal tunnel syndrome, and peri-arthritis (Battisti et al, 1998; Levalle et al, 1991). An improvement was observed in 93% of

patients suffering from carpal tunnel pain and in 83% in cases of rotator cuff tendonitis. PEMF therapy was also used for treatment of migraine, chronic pelvic pain, neck pain, and whiplash injuries (Rosch et al, 2004). **PEMF Therapy Reduces Pain** Many studies have demonstrated the positive effects of PEMF therapy on patients with pain, even as opposed to receiving traditional treatment as well as against a placebo group getting no treatment. Some studies focused on the rapid, short-term relief while others demonstrate the long-term effects. The effectiveness of PEMF therapy has been demonstrated in a wide variety of painful conditions. In a study entitled: "Double-blind, placebo-controlled study on the treatment of migraine with PEMF", Sherman R, et al. (Orthopedic Surgery Service, Madigan Army Medical Center, Tacoma, WA, USA) evaluated 42 subjects who met the International Headache Society's criteria. During the first month of follow-up with exposure to PEMF, 73% of those receiving actual exposure, reported decreased headaches with 45% a substantial decrease and 14% an excellent decrease. Ten of the 22 subjects who had received actual exposure received 2 additional weeks of actual exposure, after their initial month. All showed decreased headache activity with 50% a substantial decrease and 38% an excellent decrease. Sherman R, et al concluded that

Visit Gordon Research Institute online to read more about the applications and benefits of PEMF such as:

- Reduced pain
- Reduced inflammation
- Increased range of motion
- Faster functional recovery
- Reduced muscle loss after surgery
- Increased tensile strength in ligaments
- Faster healing of skin wounds
- Enhanced capillary formation
- Accelerated nerve regeneration
- Reduced tissue necrosis

The scientific white paper with full study references and illustrations is entitled “How PEMF Works” and can be found under the health topic PEMF.

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.



For registering for today's Electron Deficiency Webinar, you are also receiving a complimentary FACT subscription!

As a member of **FACT, you will have access to the most current protocols for managing any health condition, including, Autism, ADHD, Alzheimers's, Cancer, Chronic Infections, Diabetes, Fibromyalgia, Guillian Barre Syndrome, Heart Disease and Hypertension, Insomnia, Lyme Disease, Menopause, Metabolic Syndrome, Multiple Sclerosis, Obesity, Parkinson's Disease, and more.**

When you have a need to know, **FACT is your resource! **And It's FREE!****
You may opt out of membership at any time simply by sending an email request to "unsubscribe".

Health Consultations

Get a personalized health consultation! Dr. Garry Gordon offers his 53+ years of advanced medical experience to you via telephone, or in-person, for \$300 per hour.

Arrangements may be made with Katie Isham, by calling her at the Gordon Research Institute at 928-472-4263, ext. 134, Fax to 928-474-3819, or by emailing Katie at kisham@longevityplus.com, to learn more.

Appointments may include a review of all prior medical records and/or any new tests that can be ordered in preparation for your personalized consultation. Test panels can be more focused on ANTI-AGING, or cancer, depending on your concerns.

Since Dr. Gordon does not accept insurance, he has made arrangements for cash paying patients to obtain substantial discounts of 70% or more for any blood tests that he orders. In Addition, Dr. Gordon now offers the most advanced and comprehensive 72 gene test panel available anywhere for \$425.

NOW YOU too can have your OWN PERSONALIZED \$10,000 PILL!

THANK YOU



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