

BIOELECTRIC Devices That Work and Why

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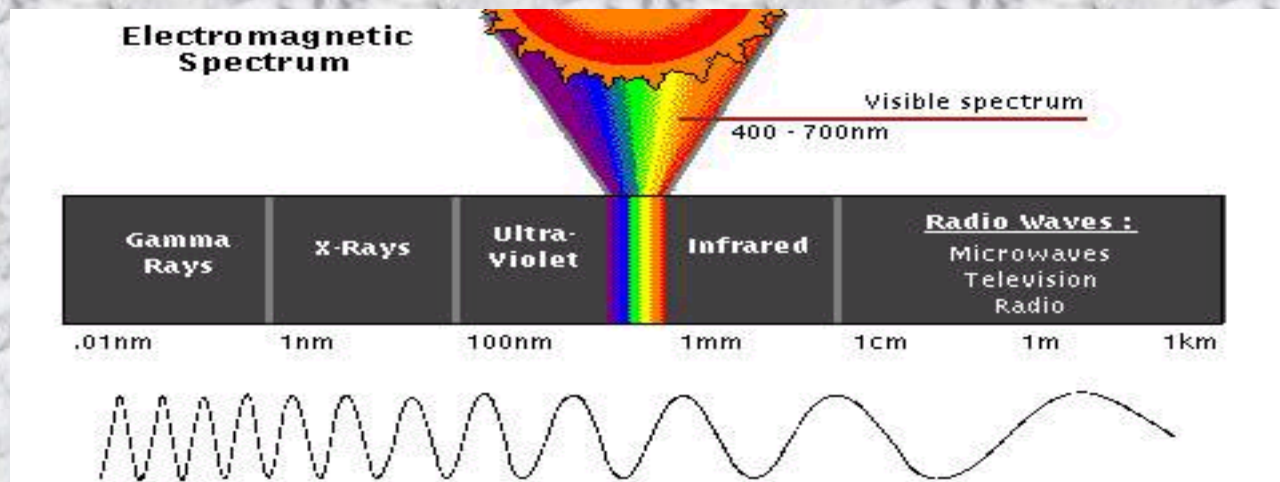
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5/3/2021



Bioelectromagnetics (BEMs)

- The study of the effects of electromagnetic fields on biological systems, in particular, human beings
- Includes electrostatic fields, sine wave (AC), and pulsed electromagnetic fields (PEMFs)



Electrons are Antioxidants

FREE RADICALS STEAL ELECTRONS

creating more free radical DAMAGE in a chain reaction (10,000 times)

Damaged mitochondrial DNA causes aging

ANTIOXIDANTS STOP FREE RADICALS WITH ELECTRONS

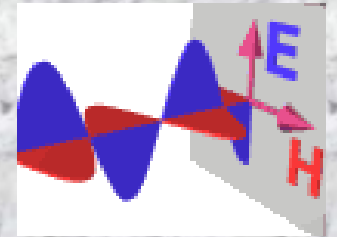
References

- **“Oxidative damage causes aging”** - *Life Enhancement*, Oct. 2004
- “Dying before their time: studies of prematurely old mice hint that DNA mutations underlie aging.” *Science News*, July 10, 2004, p. 26
- “Mice and mitochondria” Martin, *Nature*, 2004, V. 429, p. 357,417



Electromagnetic Fields (EMFs)

- Created by oscillating electrons or magnetic fields
- EMFs usually have E (electric field) and H (magnetic field) perpendicular to each other
- Resultant traveling wave may be continuous or pulsed on and off
- Excites vibrational changes and transfers energy at speed of light



Gigahertz EMFs Reduce Tumors

Effects	Species	In Vivo Exposure condition				Ref.
		Frequency (GHz)	Intensity (W/m ²)	SAR (W/kg)	Duration (days × min)	
Decreased response to PWM	Rabbit	2.45 (CW)	100	1.5	180 × 1,380	438
No change	Quail	2.45 (CW)	50	4.03	12 × 1,440	474
<u>Decrease in tumor development</u>	Mouse	2.45 (CW)	—	35	11—14 Day of gestation or 11—14 and 19—45 × 20	97
Decreased granulocytic response	Rabbit	3 (CW)	30	0.5	42—84 × 360	475
<u>Tumor regression and increase in antitumor antibodies and anti-BSA</u>	Rabbit	1.356	(Near-field application)	(Local hyperthermia)	1 × 10 — 15	476
<u>Tumor inhibition and immune stimulation</u>	Rat	2.45 (CW)	(200 W)	(Local hyperthermia)	3 or 6 × 45	477
<u>Increased tumoricidal activity in lymphocytes and macrophages</u>	Mouse	1.356	6,000—9,000	(Local hyperthermia)	1 × 5	478
<u>Tumor regression</u>	Mouse	3 (CW)	400	28*	1—14 × 120	479
Increase in lung cancer colonies and inhibition of contact sensitivity to oxazolone	Mouse	2.45 (CW)	500	36*	4, 7, 10, or 14 × 120	480
Decrease in response to BSA	Rabbit	1.356	(Near-field application)	(Local hyperthermia)	3 × 60	481
Decrease in CFU for erythroid and granulocyte-macrophage series	Mouse	2.45 (CW)	150	10	9 × 30	470
Reduction in CFU granulocyte-macrophage precursors exposed in vitro	Mouse	2.45 (CW)	600—10,000	120—2,000	1 × 15	482



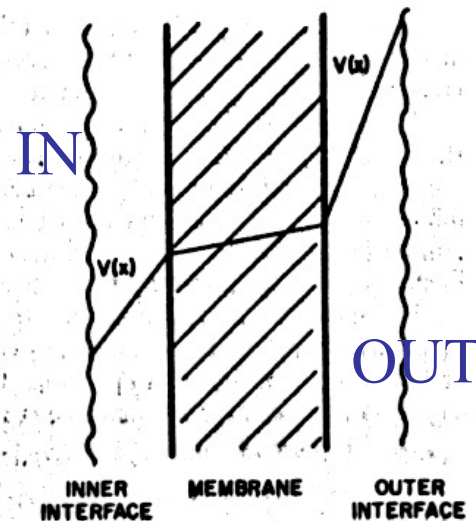
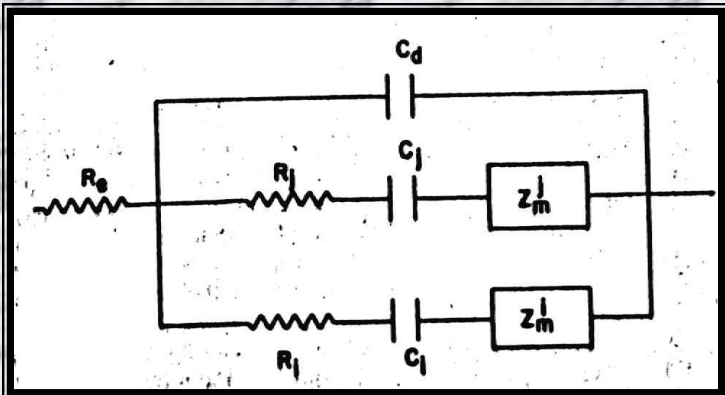
CELL MEMBRANE



1 microfarad/cm²

Animal Plasma Membrane

(Magnified approximately 4.5 million times)

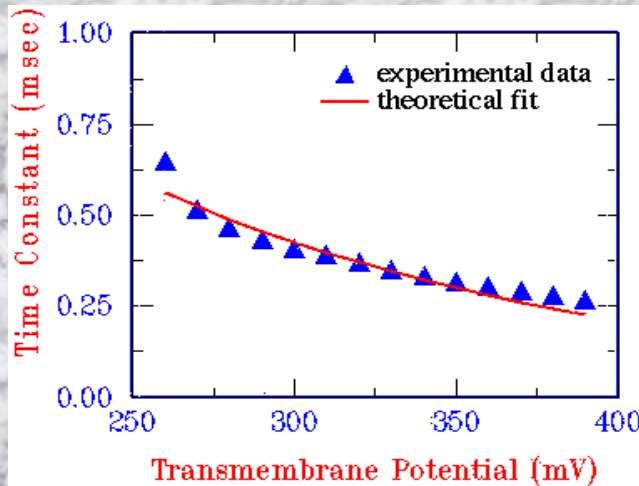


TransMembrane Potential = -70 to -100 mV only in healthy individuals. HV PEMF devices can boost TMP in diseased patients.

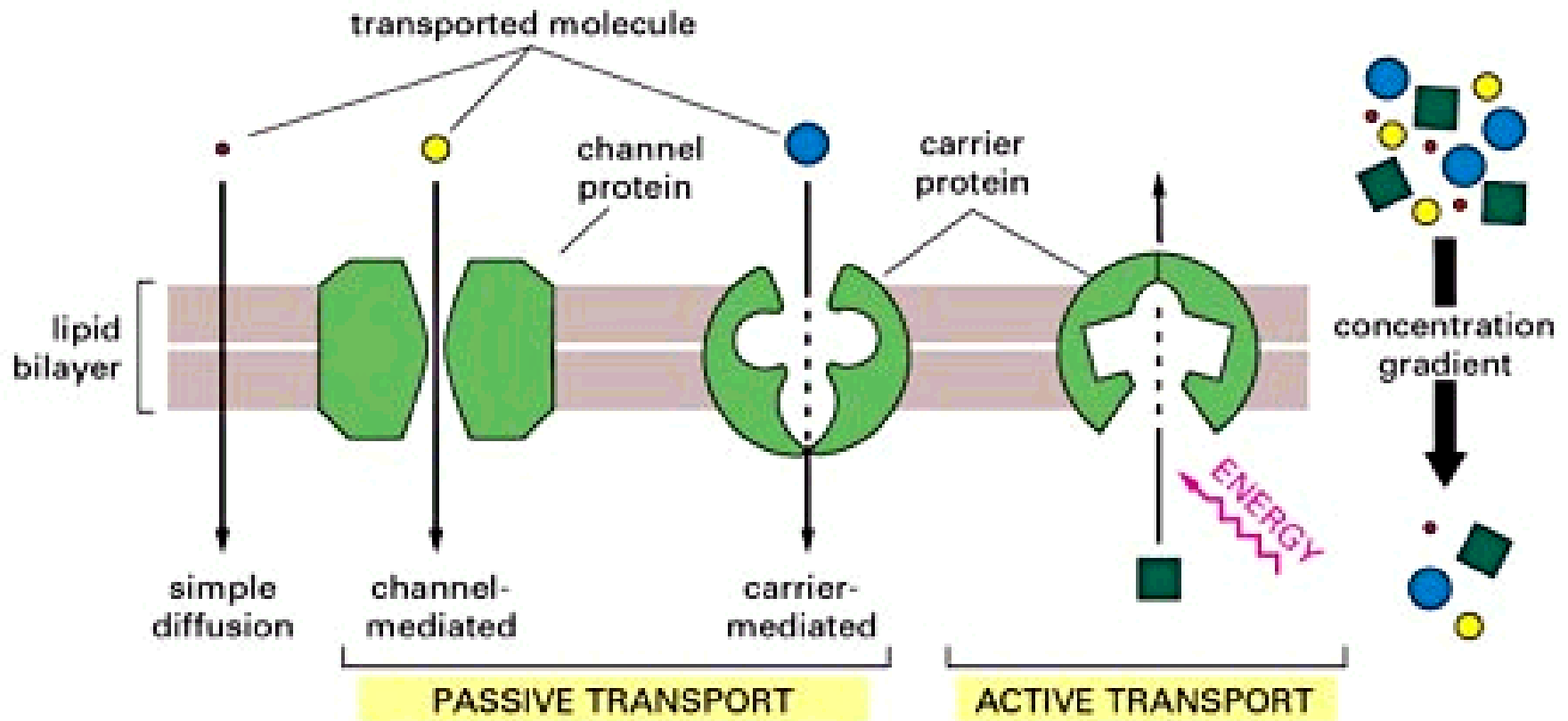


Membrane equivalent circuit
TMP is 100 kV/cm

Transmembrane Activity



- Molecular transport by active and passive means
- Energy mediates the active transport mode
- TMP is at least 100 mV across 1 nm lipid bilayer
- TMP therefore can withstand 100 kV/cm (10x air!)
- Electroporation happens in the range of 1 kV/cm



Secrets of Your TMP

- The state of the cell membranes reflect a person's state of health

- **TMP = measure of normal cell metabolism**

(The cell membrane is electrically charged by the sodium-potassium NaK pump)

- **Microorganisms will reproduce when TMP gets low so keeping TMP maximized**

is a protective measure for a strong immune system!

- **Low TMP = Low Energy**

Low TMP also causes ATP impairment, increased bacterial & viral reproduction

- **HV PEMFs raise TMP and destroy viruses and microorganisms*...“trauma-healing”**

- Adequate TMP is needed by **Schwann cells** (replacement cells) or nonfunctional undifferentiated scar tissue results**

*Jorgensen, Eur. J. Surg., 1993, V. 160, p. 85



Magnetic Pulses Regenerate

- Induces expression of HSP 70*
- Quenches inflammation and trauma
- Stabilizes free radical chemistry
- Stimulates the calcium channel transport
- Upregulates growth and restorative genes
- Downregulates dysregulatory genes
- Fast rise time of pulse is the key (dB/dt)

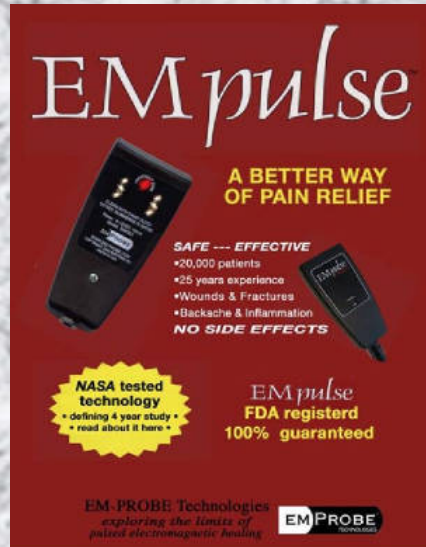


Dr. Glen Gordon is heard here from his DVD, “Speaking of your Injury” on magnetic pulse technology applications and HSP 70

* Goodman, Reba. Columbia University, Dept. of Physiology



Dr. Glen Gordon's EMpulse



← Old model

New Model
Developed
By Dr. Valone for
Integrity Research

- Fastest nanosecond rise time on market
- 7.8 Hz pulse rate
- Anti-inflammatory
- Stimulates HSP 70 in just 10 min.
- Upregulates restorative genes



Visit BioEnergyDevice.org



EM Pulser Has Nanosecond Speed

Pulsed Electromagnetic Fields - interesting...

- *Used internationally for 150 years*
- *Approved for fractures in US (1979)*
- *Marginally effective! Why? Millisecond speed*

Nanosecond Pulsed Electromagnetic Fields are revolutionary!

- *NASA 4-year study- nanosecond speed >4.0 times better at restoring tissues following injury or trauma.*
- ***EM Pulser*** is the only ***NANOSECOND*** PEMF device

Therapeutic Electric Antioxidant Clothing

- Patented invention assigned to IRI by Dr. Jacqueline Panting, ND
- Skintight shirts, pants, shorts, headband, and gloves
- Provides microcurrent electronic antioxidants continuously
- Quenches free radicals and restores energy and vitality
- Increases endurance
- Licensees, investors welcome
- See bioenergydevice.org for more info



Rationale for Healing with PEMFs*

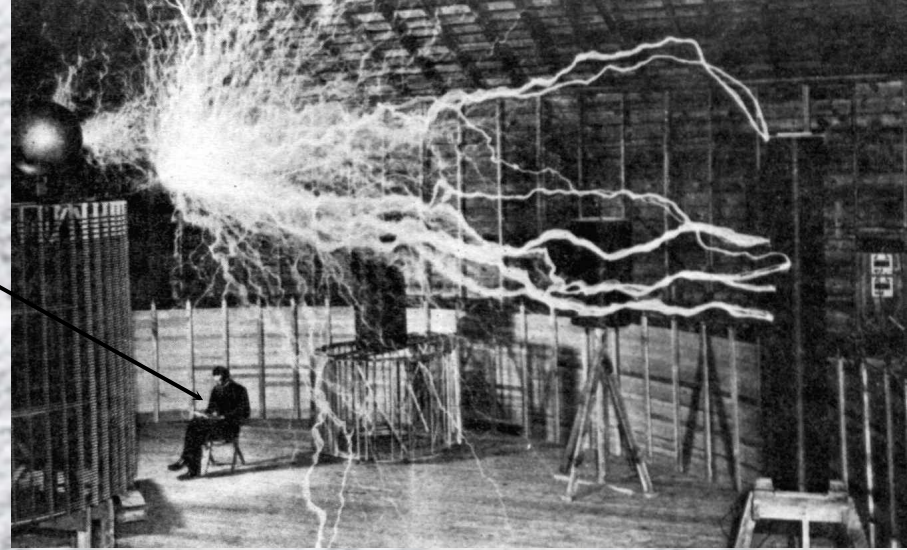
- HF EMF penetrate several centimeters into body
- Diseased cells have low TMP**
- Low TMP = Na-K pump, ATP impairment and increased bacterial and viral reproduction
- Membranes rectify AC; Proteins = Rectifier
- External HV EMFs can stimulate TMP
- Electroporation transmigrates ions & nutrients
- Boosting TMP with an infusion of antioxidant electrons helps restore the immune system
- Noticeable energy boost from PEMFs in diseased patients

*Pulsed ElectroMagnetic Fields

**TMP = TransMembrane Potential



Nikola Tesla



- Invented Tesla Coil
 - 1898 paper “High Frequency Oscillators for Electrotherapeutic and Other Purposes” read at the eighth annual meeting of the American Electro-Therapeutic Association
- Physicians responded
 - 1932 Dr. Gustave Kolischer “Tesla’s HF electrical currents ... highly beneficial results in dealing with cancer”



MEDICAL ELECTRICITY

WITH A PRACTICAL CHAPTER ON PHOTOTHERAPY

**FOUR CHAPTERS (250 pages) available on CD-ROM
from IRI called the “Tousey CD” #416 for only \$15**

BY

SINCLAIR TOUSEY, A. M., M. D.

CONSULTING SURGEON TO ST. BARTHOLOMEW'S CLINIC, NEW YORK CITY

W. B. SAUNDERS COMPANY

1916

- 1) **Electricity in Diseases of the Nervous System**
- 2) **High-Frequency Currents**
- 3) **Phenomena Accompanying the Transmission of Electricity Through Gases**
- 4) **Phototherapy**



VACUUM ELECTRODE FILLED WITH A NOBLE GAS

Tousey CD



Fig. 354.—Application of vacuum electrode by means of the author's completely insulated handle.



Fig. 380 shows a cavernous epithelioma or endothelioma of the face which resisted x-ray treatment and which was completely destroyed by a single application of sparks from a metallic electrode connected with one pole of the resonator.

Tousey CD



Fig. 380.—Cavernous endothelioma of face cured by high-frequency sparks.



**PREMIER Line of
High-Voltage
Vacuum Electrode
EMF Devices**



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PREMIER Junior

Photonic Rejuvenation Energizing
Machine & Immunizing Electrification
Radiator developed by IRI

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PREMIER Junior

Photonic Rejuvenation Energizing Machine & Immunizing Electrification Radiator

- High voltage electron transfer with direct & noncontacting means.
- Broad spectrum PEMF and discrete noble gas emissions.
- Great for muscle and joint pain.
- Portable carrying case

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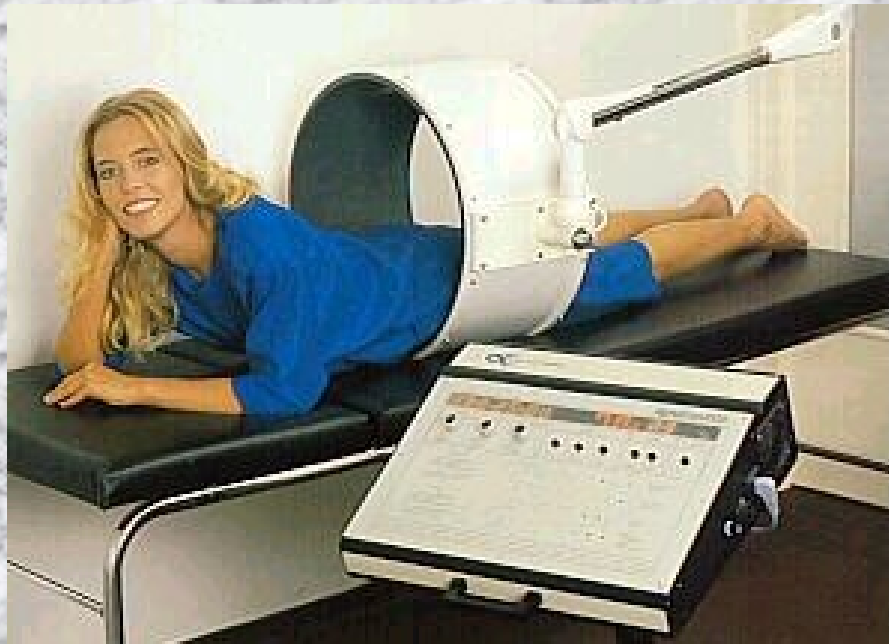
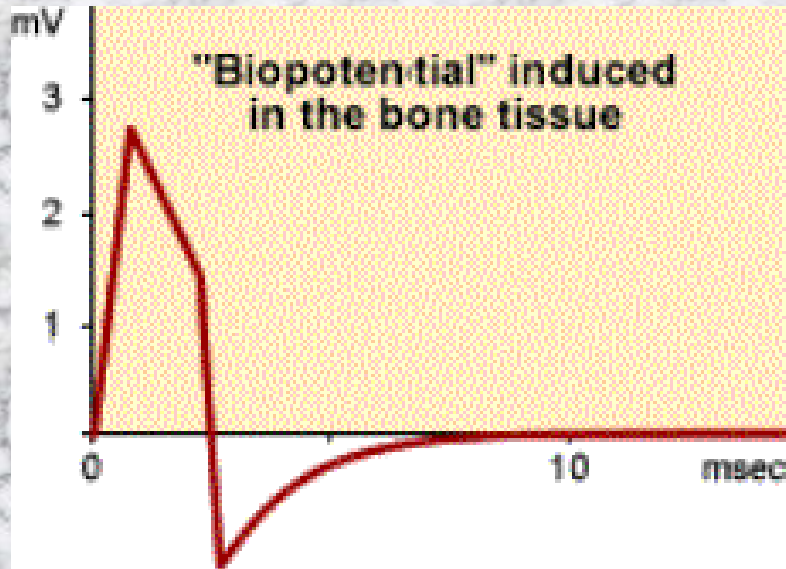


Model 100 with Y-tube option

Based on the Azure patent 6,217,604 “Method for Treating Diseased States/AIDS Using an Electromagnetic Generator” and the famous “Violet Ray” from 1920



Biostim SPT



- Pulsed magnetic field at 16 Hz also called “PEMF”
- 5 to 20 microamperes
- Speeds bone healing
- Effective in Osteo and Rheumatoid arthritis, cervical spondylosis, osteomyelitis
- FDA approved
- Yale U School of Med

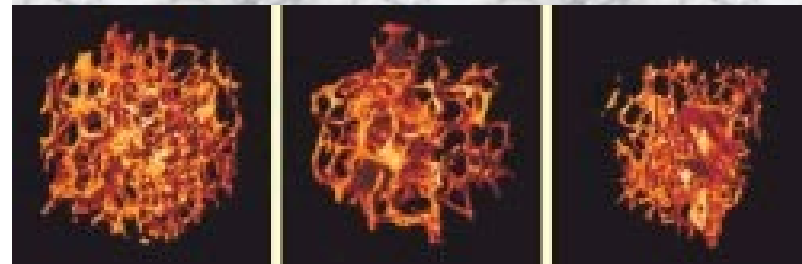
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“Medicinal EMFs” by J. Raloff

- *Science News* 11/13/99 V. 156, N. 13, p.316 - online at www.sciencenews.org
- OrthoLogic, Tempe AZ makes bone stimulator
- Dr. Sisken-U of Kentucky EMFs accelerate nerve recovery

• Exogen, Piscataway NJ vibrates 8 min/day, platform for those at risk for osteoporosis



Healthy EMF treated No ovaries
J. Kinney, Law. Livermore Nat. Lab



Yellow shows new growth in wing bones of live turkeys with coil EMFs vs. control on right
K. McLeod, Creighton U Sch of Med



OsteoPad

Designed to Restore Cartilage & Bone

**Two
models:**
OsteoPad
14" x 20"
and
OsteoPad
MaxiMat
14" x 60"



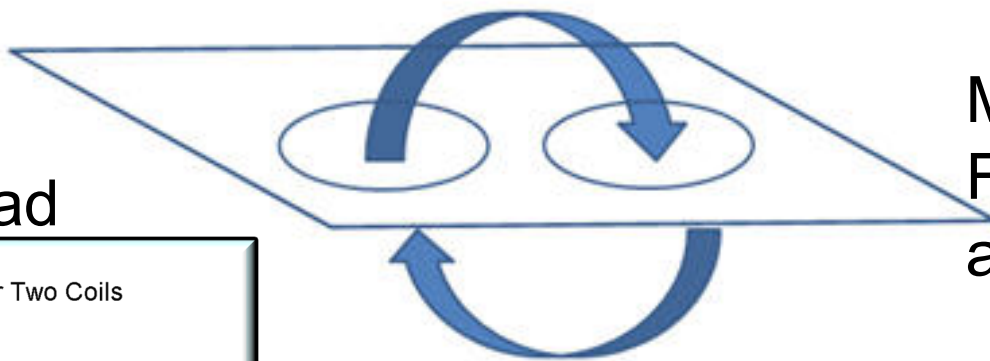
OsteoPad MaxiMat is 5 feet long and about 14" wide

OsteoPad

Pairs of Coils Make a DoubleToroid™

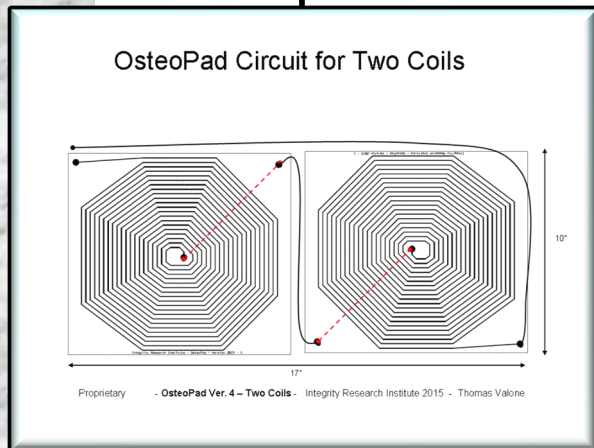
Spiral Toroid Design

means better magnetic field penetration



Magnetic
Field Line
arrows

14" x 20" pad



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Recommended Reading

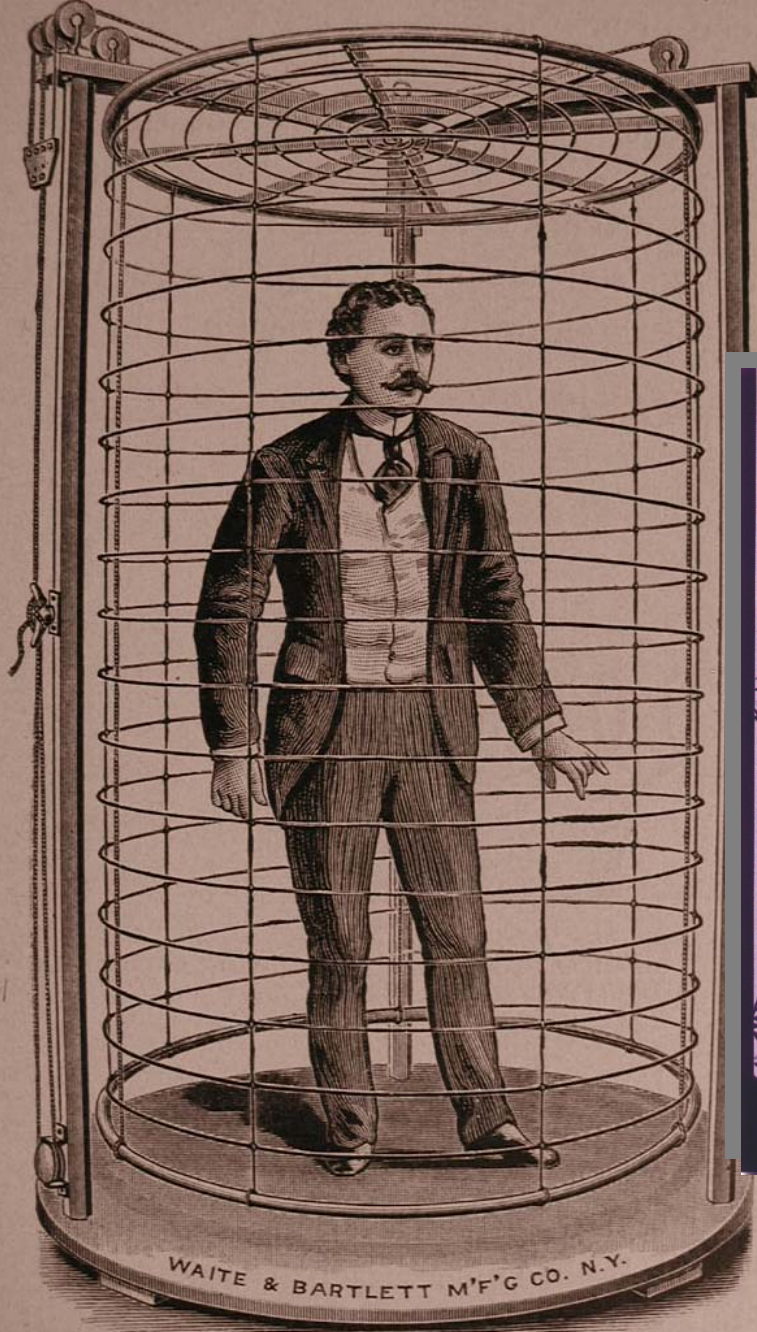
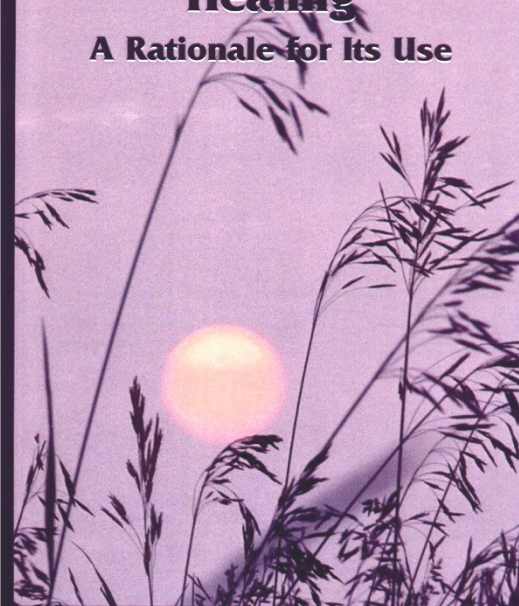


FIG. 2.—D'Arsonval Auto-Conduction Cage; Upright Form. (Piffard's.)

Bioelectromagnetic Healing A Rationale for Its Use



by Thomas Valone, Ph.D.

Pulsed Electromagnetic Field Health Effects



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