



# High Tech Healing: The Role of Voltage and Frequency in Health

Exploring the role of bioelectricity, voltage, and frequency in human health

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**Disclaimer:** *This presentation is for educational purposes only. I do not claim, nor do any of the devices or technologies I speak about claim to treat, cure, diagnose or prevent any disease. The information shared is based on emerging scientific research, which is not yet widely accepted by conventional medicine.*



# Going off the rails...

Your body functions like an electrical train system.

- Nutrients serve as the cargo.
- Voltage is the engine.
- Frequency serves as the track or guidance system
- Why are we focusing on the cargo when we don't have an engine to get it there?

# Introduction

1

## **Bioelectricity First**

The chemical and biological aspects of health should be secondary to bioelectricity.

2

## **We are a computer**

The human body is the most incredibly designed computer imaginable.

3

## **Bioelectric Foundation**

Conventional medicine often overlooks the bioelectric foundation of human biology.

**Sources of Inspiration & Research:** The Body Electric – Robert O. Becker, MD; Healing is Voltage – Jerry Tennant, MD;

Electromagnetism and Life – Robert O. Becker & Andrew Marino; The Invisible Rainbow – Arthur Firstenberg; We Are Electric – Sally

Adee; The Resonance Effect - Dr. Carolyn McMakin.

# Before We Dive In...

## Voltage

**Cellular voltage**, also known as **membrane potential**, refers to the **electrical potential difference across a cell membrane**. It is essential for **cellular communication, energy production, and overall health**.

## Electrons

Essential for energy production, electrons facilitate the creation of ATP (adenosine triphosphate) within the mitochondria, the powerhouses of cells.

## Frequency

Expressed in Hertz (Hz), frequency determines the rate of electrical oscillations, with specific frequencies influencing different tissues and biological processes.

## Bioelectricity

The body's inherent electrical currents are crucial for regulating various physiological functions, including tissue repair, immune response, and nerve signaling.

## Phase Angle

A critical indicator of cellular health, phase angle reflects the integrity of cell membranes and hydration levels, with higher angles signifying improved cellular function and vitality.

# Repolarize, Recharge, Replenish, Reprogram

Today we explore how bioelectric therapies revolutionize healing by working with your body's natural electrical systems.

Together, we'll discover why voltage and frequency are the missing links in your wellness journey.

*"The Four Pillars of Frequency Healing" by Danielle Palmer, CNMT.*



# The Body is an Electrical System

- 1 Every cell functions like a tiny battery  
Every type of cell has a specific voltage level.
- 2 To heal, cells must reach a higher charge  
This increased voltage is necessary for proper cellular regeneration and repair.
- 3 Chronic disease occurs when voltage drops below optimum levels  
This voltage disruption leads to cellular dysfunction and various health issues.

Citations: Becker, R.O. (1998). *The Body Electric*; Funk et al. (2009).

Electromagnetic effects on cell membranes and healing. *Journal of Cellular Physiology*.



# Why the -20 to -25 Model Was Beneficial

Simple models are often the first doorway into deeper physiology.

- It simplified complexity.
- It gave practitioners a target
- It made bioelectricity actionable

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# Your Body: Cells, Cells and More Cells

To understand health, we can view the body as the most sophisticated computer in existence, with distinct components that work together. If any part of this system is compromised, the output—our overall health—will be affected.

## **RBC's -70%**

Red Blood Cells make up the majority of cells in the body.

## **Glial Cells- 8%**

Non-neuronal cells found in the central and peripheral nervous system that provide protection and support for neurons.

## **Endothelial, Fibroblasts, Platelets 4-7%**

Accounting for 4-7% respectively Endothelial cells (7%), Fibroblasts (5%) and Platelets (4%)

## **Bone Marrow 2%, Other 3%**

The two types of cells that make up the least amount of our body are Bone Marrow and “other” cells that fall into such a small percentage it is better to clump them into one.

# Human Cells- Resting Membrane Potentials

- Red Blood Cells: -10mV
- Platelet: -55mV
- Endothelial: -17mV
- Fibroblast: -16mV
- Bone Marrow: -29 to -35mV
- Neurons:  $\approx$  -65 to -70 mV
- Skeletal muscle:  $\approx$  -88 mV
- Glial Cells: -40mV



Boron & Boulpaep, 2017

# Voltage is Tissue Specific



Each tissue has a specific voltage range that is tied to its function.

- Differentiation correlates with hyperpolarization
- Cellular voltage varies greatly by type.
- Forcing a single number ignores physiology entirely.

“The body is electrical, it's just not electrically uniform.”



# Cellular Voltage & Healing



Voltage determines cell function & repair (phase angle)



Cells generate electricity through:

- Sodium-Potassium (Na<sup>+</sup>/K<sup>+</sup>) pumps
- Mitochondria (ATP production)
- Piezoelectricity (movement-induced charge)



Low voltage = low oxygen, poor healing, & chronic illness

Citations: Levin, M. (2020). Bioelectric signaling in regeneration and cancer. Nature Reviews Molecular Cell Biology.

# Chronic Disease & Low Voltage

## Low voltage is linked to:

- Chronic fatigue, persistent pain, and widespread inflammation throughout the body
- Autoimmune diseases, where the body attacks its own tissues
- Organ dysfunction, affecting the liver, kidneys, and other vital organs
- Impaired detoxification processes
- Increased susceptibility to infections

## Voltage disruptors:

- Scars and Tattoos
- Thyroid Dysfunction (T3)
- Toxins:
  - -Environmental pollutants, pesticides, EMFs from electronic devices, heavy metals like mercury and lead
- Poor nutrition, lacking essential vitamins and minerals, chronic infections, and physical injuries
- Emotional trauma & chronic stress, affecting hormonal balance and overall health
- Dehydration, hindering cellular functions
- Lack of sleep, disrupting the body's natural repair mechanisms

Citations: Becker, R.O. (1998). The Body Electric; Firstenberg, A. (2020). The Invisible Rainbow.

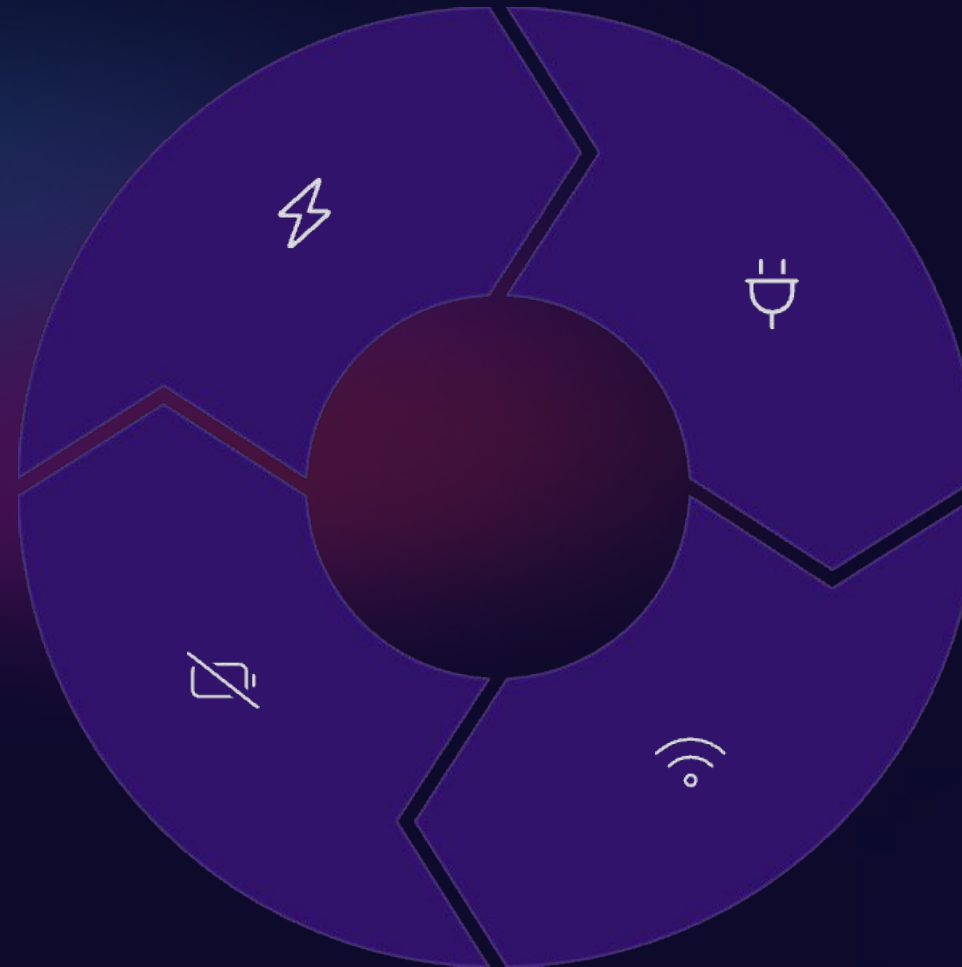
# The Body's Electrical Circuitry

## Piezoelectric Effect

Muscles generate voltage via movement

## Circuit Blockages

Dental issues, scars, toxins, thyroid dysfunction, emotional trauma  
"Holes in your bucket"



## Fascia as Wiring

Acts as the body's wiring system

## Acupuncture Meridians

Function as information super highways

Citations: Langevin, H.M. (2016). Fascia as an electrical network. Journal of Bodywork & Movement Therapies.

# The "Leaky Bucket" Syndrome

Your body is like an electrical bucket. Energy flows in and out constantly. The bucket is supposed to stay full but various factors allow it to drain faster than it fills.



## Energy Inputs

Proper nutrition, hydration, sleep, and positive emotions charging cellular batteries.



## Energy Outputs

Toxins, EMF exposure, emotional stress, and physical trauma create energy drains.



## Healing Challenge

You can't fill a leaky bucket. Address the holes before attempting to recharge.

# Good Luck

## How Do We Fix It?

- Drugs, supplements, and IV therapies offer limited success in chronic conditions.
- They often target or attempt to address symptoms without fixing the underlying cause or improving electrical imbalance.
- True healing requires restoring the body's electrical foundation first.
- Chemical therapies work best after cellular voltage has normalized.

# Cellular Communication: Beyond Chemistry

**Voltage Signaling:** Cells create electrical gradients across their membranes, enabling rapid and direct communication across tissues. This method allows for faster responses than traditional chemical signaling, proving vital for processes that demand immediacy, such as nerve impulse transmission and muscle contraction.

**Ion Channel Communication:** Voltage-gated channels open and close in direct response to electrical signals, triggering precisely timed cascades of cellular responses. This mechanism allows cells to fine-tune their activities and modulate signaling pathways according to the body's immediate needs, ensuring both efficiency and accuracy in cellular communications.



# Resonance: The Healing Frequency

1

## What Is Frequency?

Frequency can be described as the number of waves within a period of time.

i.e. 15hz is 15 waves in one second.

2

## What is Resonance?

**Resonance** is the phenomenon where an object or system **vibrates at its natural frequency** when exposed to an external force or frequency that matches or is harmonic to its own. It results in an **amplification of energy** within the system.

**Quantum & Biological Resonance:** Certain frequencies can influence **biochemical reactions, cellular communication, and healing processes** by aligning with the body's natural frequencies (**Gerber, 2001**).

3

## Resonance in the Body

Every single structure and function within your body has a specific frequency. When the frequency of a structure is emitted by a device it will only effect that specific structure or function and nothing else.



# Senergy's Biomodulator®

The Senergy Biomodulator® delivers precise microcurrent frequencies to restore healthy cellular voltage.



Voltage Restoration



Biofeedback  
Technology



Non-Invasive Treatment

# How the Biomodulator® Works

## Microcurrent Therapy

Emits pulsed, damped biphasic waveforms in the microampere range (20–500  $\mu$ A)—similar to the body's natural electrical currents.

Unlike TENS (which uses milliamps), microcurrent does not force nerve depolarization, but instead gently interacts with the nervous system and tissues to restore normal function.

## Real-Time Biofeedback System

Continuously adjusts electrical impulses based on tissue impedance measurements, ensuring customized and dynamic stimulation.

Prevents the nervous system from "tuning out" the stimulation, making treatments more effective over time.

## Neurological and Pain Modulation

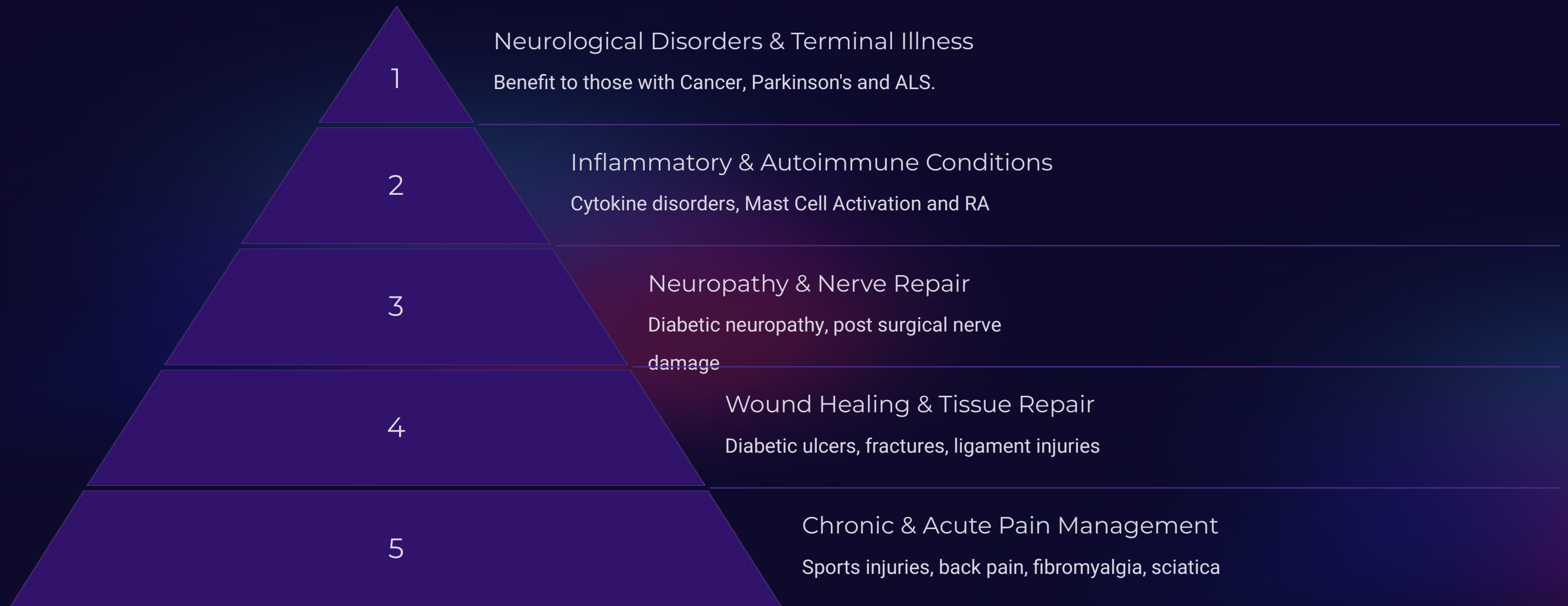
Activates C-fibers and sensory nerves, triggering the release of natural painkillers like endorphins, enkephalins, and endocannabinoids.

Engages descending pain inhibitory pathways, reducing the brain's perception of pain.

Works via the gate control theory by blocking pain signals at the spinal cord level.

Citations: Cheng, N., et al. (1982). Effects of microcurrent on ATP generation. Clinical Orthopaedics and Related Research.

# Benefits & Uses of Microcurrent/Frequency



\*We do not TREAT, CURE, DIAGNOSE or PREVENT any disease or illness. These are merely things that people have been diagnosed with who have undergone treatment for pain and for general wellness.

Citations: McMakin, C. (2005). The Resonance Effect: How Frequency Specific Microcurrent is Changing Medicine.

# BioTransducer Crystal Wave Pro ®

- The next evolution in bioelectric medicine, our at home Crystal Wave as well as our NEW BioTransducer Crystal Wave Pro® enhances the Biomodulator's effectiveness through scalar field technology combined with PEMF.
- This advanced attachment creates coherent energy fields that penetrate deeper into tissues, optimizing cellular communication and voltage restoration.
- Perfect companion for addressing stubborn conditions where traditional approaches have limitations.



# Therapeutic Benefits of 660 nm Red Light

## Cellular Mechanism

- Absorbed by cytochrome-c-oxidase → ↑ ATP, ↑ repair, ↑ microcirculation
- Stimulates fibroblasts + collagen remodeling

## Skin Rejuvenation

- Improves collagen density, wrinkles, texture, elasticity
- **Studies:** Barolet 2009; Lee 2022

## Wound Healing & Tissue Repair

- ↑ Angiogenesis, ↑ fibroblast activity, faster tissue regeneration
- **Studies:** Amaroli 2018; Hopkins 2016

## Anti-Inflammatory & Pain Reduction

- ↓ IL-1 $\beta$ , TNF- $\alpha$ , COX-2; supports joint + soft-tissue pain relief
- **Studies:** Rojas & Gonzalez-Lima 2019; Silva 2015

## Hair Growth Support

- Stimulates dermal papilla cells + prolongs anagen phase
- **Studies:** Lanzafame 2014; Jimenez 2016



# Therapeutic Benefits of 465 nm Blue Light

## Antimicrobial Effects

- Generates ROS via porphyrin excitation → kills acne-related & resistant bacteria
- **Evidence:** 465 nm produces dose-dependent MRSA/MSSA kill  
(PubMed: "In vitro bactericidal activity of 465 nm blue light," 2017)

## Dermatology (Acne + Oil Modulation)

- Reduces *C. acnes*, decreases sebum activity, improves inflammatory lesions
- **Evidence:** Blue-light PBM improves acne severity & reduces cytokines  
(Journal of Biophotonics, 2022; Dermatology PBM Reviews 2021–2023)

## Anti-Inflammatory Cellular Effects

- Down-regulates IL-1, TNF- $\alpha$ , and pro-inflammatory signaling
- **Evidence:** Immune-modulating effects of blue-light PBM  
(J. Biophotonics, 2022)

## Alertness, Fatigue, Cognitive Support

- Short-wavelength light (~460–470 nm) increases vigilance & reduces daytime fatigue
- **Evidence:** 465 nm reduces fatigue in TBI populations  
(MDPI NeuroSci, 2024)

## Circadian Regulation

- Stimulates melanopsin pathways → boosts daytime alertness & circadian alignment

• **Evidence:** Short-wavelength light impacts circadian rhythm & cognition  
(Photobiology studies, 2010–2024)



# Scientific Evidence: PEMF Therapy Benefits

## Cellular Regeneration

Enhances ATP production, promoting faster cell repair.  
Stimulates stem cell activity, accelerating tissue healing.

1

2

## Pain & Inflammation Relief

Modulates nerve conduction and neurotransmitter release.  
Lowers inflammatory cytokines and oxidative stress markers.

3

## Bone & Joint Health

Accelerates fracture healing and reduces osteoporosis risk.  
Enhances collagen synthesis and cartilage repair.

4

## Neurological Benefits

Improves brain function and neuroplasticity. Increases cerebral blood flow, aiding in cognitive health.

5

## Circulatory & Immune Support

Enhances microcirculation and oxygen delivery. Boosts immune cell activity, reducing infection susceptibility.

# Benefits of Scalar Fields

The Crystalwave BioTransducer® enhances the Biomodulator® by working at the quantum cellular level. The benefits of scalar fields include:

- 1 Cellular Regeneration**  
Enhances ATP production and bioelectric signaling.
- 2 Anti-Inflammatory**  
Reduces cytokine activity and oxidative stress.
- 3 Neurological Support**  
Modulates brainwaves for relaxation and clarity.
- 4 Immune Enhancement**  
Increases T-cell activity and supports detoxification.
- 5 Improved Circulation**  
Enhances blood flow and tissue oxygenation.

These non-invasive scalar fields complement electrical stimulation. Research by Puharich, Pilla, and Rein supports these mechanisms of action, though studies continue to explore their full therapeutic potential.



# Additional Citations:

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# Scientific Evidence & Conclusion

1

## Scientific Evidence & Studies Supporting the Biomodulator

- Pain Management Trials: Significant pain reductions comparable to TENS and acupuncture
- Neuropathy & Nerve Regeneration: Increased blood flow, sensory improvement in diabetic neuropathy patients
- Wound Healing Research: Faster healing, increased collagen production, and reduced scarring
- Anti-Inflammatory Effects: Lower IL-1, IL-6, TNF- $\alpha$  markers in fibromyalgia and muscle recovery studies
- Safety Profile: Non-invasive, drug-free, and minimal side effects

2

## Key Takeaways

- Proven pain relief
- Increases ATP & cellular healing
- Reduces inflammation & improves circulation
- Enhances wound healing & tissue repair
- Safe, non-invasive, and drug-free

3

## Conclusion

The Biomodulator is a scientifically supported microcurrent therapy device that modulates pain, promotes healing, reduces inflammation, and enhances overall well-being. Unlike conventional treatments, it engages the body's natural repair mechanisms for long-term recovery.

# Real-World Success Stories

Every day, I work with patients and clients facing devastating diagnoses. Their journeys from despair to hope reveal the Biomodulator's true impact.

## Terminal Cancer

Patients report reduced pain, improved quality of life, and enhanced response to traditional treatments.

## Chronic Neuropathy

Restored sensation and function in cases where conventional medicine offered no solutions.

## Autoimmune Disorders

Reduced inflammation markers and fewer flare-ups, allowing medication reductions for many patients.

## Treatment-Resistant Pain

Life-changing relief for those previously dependent on opioids or facing surgical interventions.

These aren't just clinical outcomes—they represent restored lives, renewed hope, and reclaimed futures.



"Repolarize, Recharge, Replenish, Reprogram"

Thank You for exploring the science of bioelectric healing with us today.

Special thanks to Senenergy Wellness Group for advancing biomodulation  
technology!

**The Frequency Therapist**

