

**H·wave<sup>®</sup>**

*ELIMINATE PAIN. RESTORE FUNCTION.*

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**A Superior Evidence Based  
Drug Free Treatment Tool**

By Electronic Waveform Lab, Inc.  
Huntington Beach, CA



# Topics

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- H-Wave Background & Uniqueness
- Benefits of H-Wave Clinical Use
- Benefits of H-Wave Home Use
- Protocol and Usage Overview
- Schedule Follow Up Training

# What is H-Wave?

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H-Wave is a unique modality used to help patients eliminate pain and restore function.

By dramatically improving circulation and lymphatic drainage H-Wave is able to achieve more rehabilitative and cumulative effects in patients...

This distinguishes us from other modalities.



Home Model H4



Home Model P-4



Clinical Model P-6

# Limitations Common to Electrical Stimulation

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- Many devices are designed to simply mask pain; providing no rehabilitative benefit
- Other devices contract muscle and can be useful for muscle re-education, toning, etc.
- However the static waveform with high frequencies and voltages of most devices create tetanizing muscle contractions, which can lead to discomfort and muscle fatigue
- A tetanizing and therefore fatiguing muscle contraction is not well suited to improving fluid shifts and clearing inflammation from the area limiting the rehabilitative benefits

**Higher  
Frequencies  
(20, 40, 80+ Hz)**

**and**

**Higher  
Voltages  
≈100-300V**

**Short Pulse  
Durations  
≈200  
microseconds**



# How is H-Wave Different?

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- We know that inflammation is the leading cause of disability and associated symptoms in Workers Compensation.

(Leigh, JP. Miller, TR. Job-Related Diseases and Occupations Within a Large Workers' Compensation Data Set. American Journal of Industrial Medicine 33:197-211)

- Therefore, rather than masking pain or trying to tone or strengthen muscle, we target this common root cause of symptoms.



# How Does it Work...

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- A unique technology and dynamic waveform allows H-Wave to use greatly altered parameters.
- An extremely long pulse duration allows for a very strong signal
- An ultra low frequency helps prevent discomfort, tetanization and fatigue
- The resulting strong yet non-tetanizing contractions are ideally suited to stimulate the circulatory and lymphatic systems
- Thereby bringing nourishment to and removing waste from the injured area

**Ultra Low  
Frequency  
2 Hz**

**Extremely  
Long  
Pulse Duration  
  
5  
milliseconds**



## The Result...

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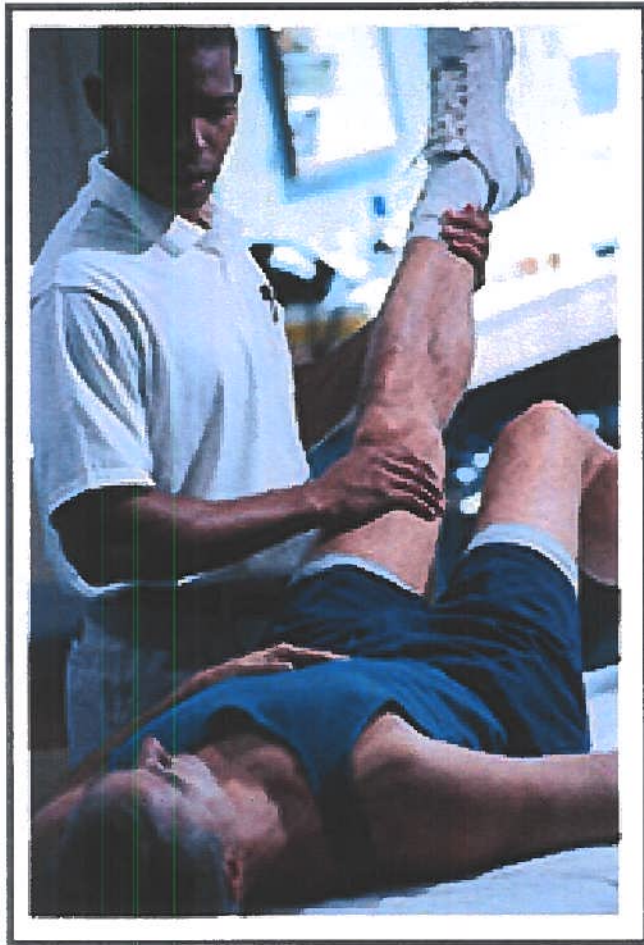
This helps remove the inflammation and congestion that is often causing symptoms:

- Pain
- Swelling
- Loss of ROM
- Spasm, etc.

Thus providing a rehabilitative and cumulative result in patients

# What Does This Mean For You...

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- H-Wave can help get rid of these common obstacles to:
  - Active Rehabilitation
  - Strengthening
  - Functional Restoration, etc.





# When Fluid Shifts Are Not Enough

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- A secondary Pain/Anesthesia setting is available
- Fatiguing the sodium pump
- Breaking the pain cycle
  - Example: We perform crown preparations in dentistry and drill for 30+ minutes using H-Wave as the only form of anesthesia
  - Available to watch at: [www.YouTube.com/EWLHWave](http://www.YouTube.com/EWLHWave)



# Our Other Credentials:

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- FDA Clearances
  - 4 distinct clearances with 15 indications for use including: pain, ROM, circulation, spasm... and anesthesia during dental procedures
- Elite Clientele
  - Over 60 professional teams including: Lakers, Packers, Yankees, Pistons, Blackhawks, Warriors and Olympians like Apollo Ono...
- Research
  - More than a dozen peer-reviewed published studies indexed by PubMed.gov covering many topics including:
    - Pain Control
    - Medication Reduction
    - Functional Improvement
    - Post Operative Range of Motion
    - And H-Wave's Mechanisms of Action



# Published Outcomes

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Researchers from Wake Forest University School of Medicine recently published several placebo controlled clinical studies on the mechanisms of H-Wave. The studies demonstrated:

- Nitric Oxide dependent vasodilation
- Vastly improved blood flow, and...
- Angiogenesis with repeated use

- H-Wave® Induces Arteriolar Vasodilation in Rat Striated Muscle via Nitric Oxide-Mediated Mechanisms. *Journal of Orthopaedic Research*. Sept 2009. DOI 10.1002/jor.20851. P. 1248-1251
- The H-Wave® Device Induces NO-Dependent Augmented Microcirculation and Angiogenesis, Providing Both Analgesia and Tissue Healing in Sports Injuries. *the physician and sportsmedicine*. Dec 2008. Vol:36 No:1. P. 103-114



# Published Outcomes

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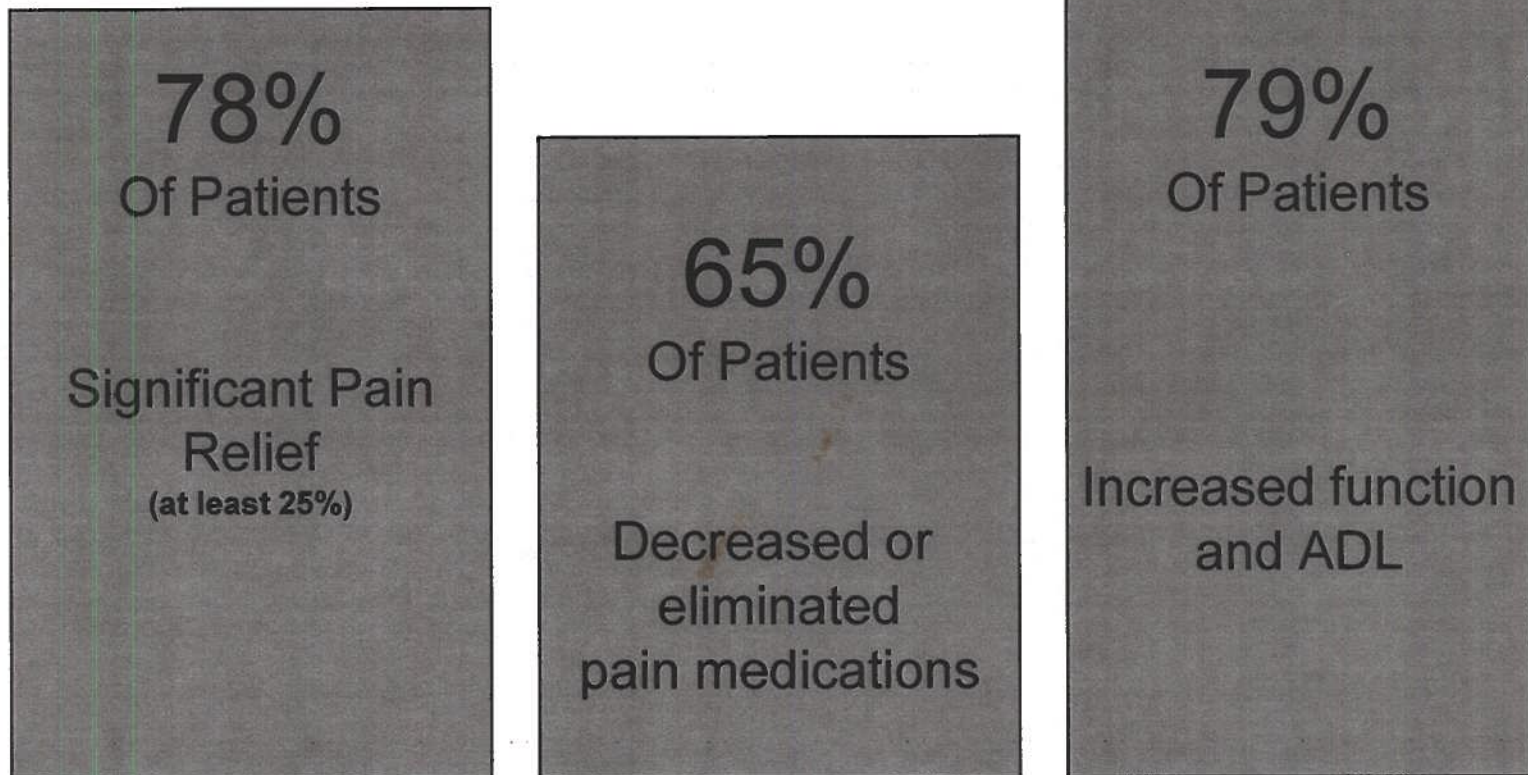
Excerpts from another peer reviewed study:

- 6,774 subjects with chronic symptoms unresponsive to conventional therapies
  - The H-Wave® Small Muscle Fiber Stimulator, a Nonpharmacologic Alternative for the Treatment of Chronic Soft-Tissue Injury and Neurophathic Pain: An Extended Population Observational Study. *Adv in Ther.* Sep/Oct 2006. Vol:23 No:5. P.739-749



# Published Outcomes

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◦ ***Advances in Therapy. Sep/Oct 2006. Vol:23 No:5. P.739-749***



# Benefits of H-Wave Clinical Use

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- Remove obstacles to allow for more and greater active therapy
- Breakthroughs on the most difficult pain and ROM patients
- Improved patient compliance
- Clinical and marketing differentiation

# Why Facilitate Home Use...

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- Sub Acute and Chronic Patients typically have symptoms outside the hours of Therapy
- This leaves drug use as the primary option for patients
- The negatives are abundant...

# Medication Problems

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- The monthly (direct) cost of combined medications is high ( $\approx$ \$300-\$600+ per month), and treating the related complications can nearly double that cost. (Griffin, RM. The Price tag of living with chronic pain. WebMD. 10/13/08)
- Prolonged use of NSAIDs, Muscle Relaxants and Narcotics (Opioids) retard healing, hinder return to function, cause addiction, depression, and delayed recovery\* as well as potential damage to the liver, kidneys, GI tract and the heart.

\*ACOEM Practice Guidelines 2<sup>nd</sup> Edition





# Medication Problems

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## Prescription Pain Medication:

- The CDC reports that prescription medication overdose is now the **Number 1 Cause of Death** in adults 25-44 and the Number 3 Cause of Death in adults 45-54, overshadowing auto accidents, cardiovascular disease and cancer.
- More adults overdose on prescription drugs than cocaine and heroin combined.



## Bottom Line...

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- If your patient can't or won't follow your orders (because of drug use and/or symptoms)... Your clinical results are compromised.
- Sub Acute and Chronic Patients need an accessible treatment option that complements therapy instead of hampering health and recovery
- H-Wave has zero side effects
- Is less costly than the combined medications used for chronic patients
- And is available to the patient 24/7



# Why Facilitate Home Use...

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- Help patients stay motivated, returning to therapy, and healthier by using less medication
- Proceed to more active rehab activities sooner and progress with them further...
- Which can result in stronger patients and better outcomes
- If patients use less drugs and get better faster...  
Your business will grow!



# H-Wave Program Services

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- Continuous on site training is provided to ensure the best possible clinical results
- We handle all paperwork associated with home use referrals
- We personally and thoroughly instruct patients on home use
- Extensive follow up is provided to ensure compliance and success with home use



## H-Wave Offers a 30 Day Risk-Free Guarantee

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If your patient is not happy with their results during the first 30 days of use... they simply return the unit... no cost... no obligation



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- Treatment Protocol Overview
- Getting the best results with regularly scheduled follow up sessions



# Frequently Asked Questions

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Q. Will insurance pay for center-based H-Wave use?

A. Yes. It bills as unattended electrical stimulation (just as all electrotherapy is billed in the clinic)

Q. Will patients get the same results from home-based use as they do from center-based use?

A. Most likely no. Why? Because patients often use their home H-Wave machines every day for several hours per day or more... Thus, as a general rule, center-based results simply cannot compete with home-based results.

Q. What happens if the insurance company refuses to pay for home use?

A. Since this program is for injured workers, the patient never pays... If we are unable to collect our fee the patient simply returns the H-Wave. However, and regardless of whether we get paid or not, I will teach the patient how to use the H-Wave and provide continuous support as long as they are using the machine.

Q. When is H-Wave a viable treatment option?

A. Anytime that you feel that increasing regional circulation and or calming a irritated nerve would help you help your patient... Try H-Wave

\*\* The answer is the same regardless of the location of symptoms (ie. low back, carpal tunnel, knee shoulder...)

Q. When is home use appropriate?

A. Identify patients that due to symptoms, are: Unable to work, Using drugs, Not following your home and/or center-based orders