

# PATIENT GUIDE

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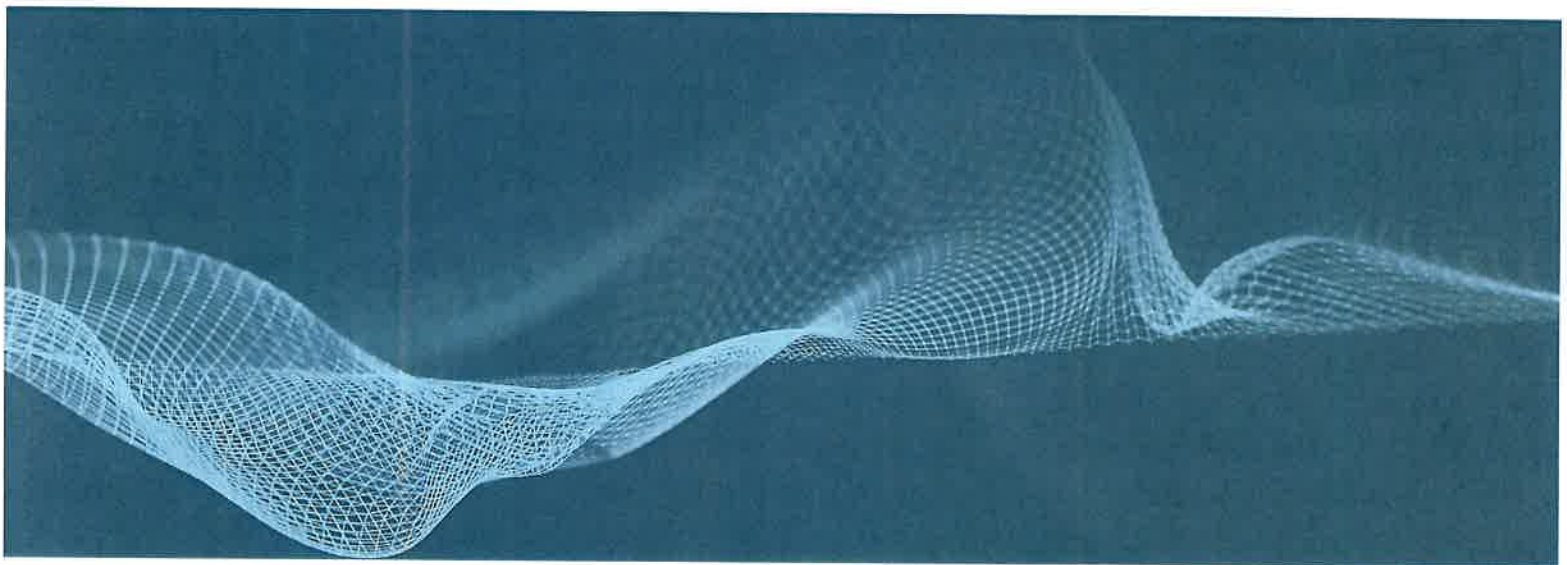
## BEYOND TENS: ELECTRIC CELL SIGNALING MEDICINE

To most people, TENS is synonymous with electrical stimulation. However, there is now a considerably more advanced form of electromedicine being used by innovative physicians in clinical practice, as well as numerous hospitals throughout the country. This method, referred to as Electric Signal Treatment (EST), appears to be providing more effective treatment and longer lasting pain relief for the patient.

EST involves the use of electrical modalities of pharmaceutical strength and using resonant frequencies and associated harmonics in ranges much greater than conventional TENS. Under the direction of a trained medical professional using the proper EST protocol, patient dosage and anatomical electrode application, these specialized medical devices can safely and effectively treat most pain and circulatory (vascular) conditions.

The clinical uses for the Electric Signaling Treatment (EST) systems include:

- acute and chronic pain conditions
- adjunctive treatment of post-traumatic pain syndromes
- management and symptomatic relief of chronic (long-term) intractable pain
- adjunctive treatment in management of post-surgical pain problems
- neuromuscular reeducation and training
- relaxation of muscle spasms
- prevention of retardation of disuse atrophy
- increasing of local blood circulation
- immediate post-surgical stimulation of the calf muscles to prevent phlebothrombosis



## A BRIEF HISTORY OF CLINICAL ELECTROMEDICINE

A Wide variety of medical conditions have been successfully treated with electrical stimulation for nearly 2,000 years. The first reported application of electromedicine was by medical doctors in Greece. Using electrical impulses for treatment for pain and circulatory disorders, electric eels were placed in footbaths. Doctors and Dioscorides (circa 46AD) documented substantial therapeutic results with electrical currents in both pain and circulatory conditions.

In the 1700's European physicians used controlled electrical currents from electrostatic generators almost exclusively for the treatment of pain and circulatory dysfunction. During that period, Benjamin Franklin also documented pain relief by using electrical currents for "frozen shoulder."

By the late 1800's, more than 50% of all American physicians used some form of electromedicine in their practices daily for pain management and wound healing. This continued until 1910, when a misleading report was published which discredited the value of electromedicine and nutritional therapy in the human body. This report was responsible for the decline in the use of electromedicine in the physician's private practice.

Only in the last fifteen years have these valuable treatments regained acceptance in the medical community and are now being taught at many leading university medical teaching facilities throughout the United States. Some of the most prestigious medical/scientific treating facilities in the United States are routinely applying electromedicine successfully for pain management, circulatory and vascular issues, as well as many difficult neuromuscular problems.

The modern age of clinical electromedicine actually began in Germany around 1950, when electrical signals or impulses could be generated mimicking the electrical impulses which naturally occur in the human body. Using this type of electrical current, medical treatments could be applied safely and comfortable to human skin, while the benefits could be delivering to deep tissue i.e. shoulder, hip and low back.

Electromedical treatment gained wider acceptance in the 1960's, when medical researchers, Melzak and Wall published the "Gate Control Theory of Pain." These researchers found that certain cells in the spinal cord act as gates through which pain travels to the brain. Overloading these neural transmitter cells will block the naturally occurring electro/chemical pain impulses and thus relieve pain. The Gate Control Theory was accepted by the medical community and helped popularize the use of transcutaneous electric nerve stimulation (TENS) in the United States.

Typically TENS units are portable battery operated devices worn continuously by the patient. They are commonly used to relieve pain via nerve counter-irritation and by stimulating morphine-like chemical substances, i.e. endorphins, which are naturally created within the human body.

## ABOUT THE ELECTRIC SIGNAL TREATMENT

Once a diagnosis is made and treatment plan is prescribed, the physician or clinician will select the proper EST cell-signaling parameters. The proper dosage level will then be selected dependent upon the individual patient and specific medical condition.

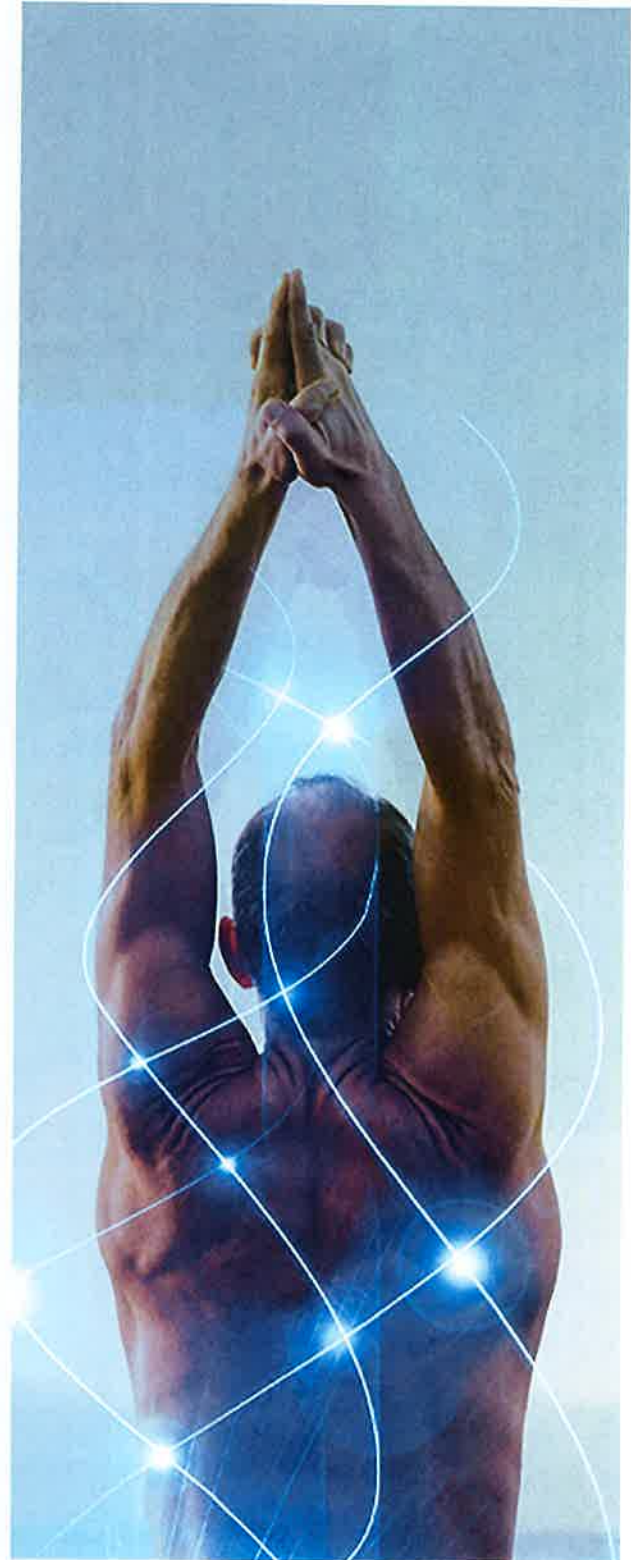
Patient dosing is usually based upon the verbal feedback given by the patient to the physician or medical technician. It is usually NOT correct to believe that a "higher EST sensation is better" It is important to keep in mind that specific dosages produce different physiologic mechanisms of action and hence accomplish different desired effects in the body. Only trained medical professionals should administer the dosage.

In NO case and at NO time should the patient ever experience a burning or stinging sensation from the electric signal (EST) treatment under the electrodes! If a burning or stinging sensation is ever felt, notify the physician or medical technician immediately.

In all cases, except specific procedures administered by your physician, the patient should be comfortable and enjoy the treatment. With proper dosage, the actual sensation experienced and reported by the patient will vary greatly among different individuals.

Nervousness about EST and overall fear associated with treatment or medical procedure may be observed. Patients who have experienced an electric signal treatment (EST) report a tingling, vibration or mild pressure sensation. Some describe EST as feeling like running water under their skin or a gently tickling sensation that makes them feel sleepy.

In almost all cases, patients report an enjoyable or pleasurable sensation and additionally, if the vasopneumatic device is also applied in conjunction with EST, patients experience a gentle pulsation and massage.



## ADDITIONAL QUESTIONS OR CONCERNS

**Q. Occasionally, when my electric signal treatments are finished, I notice that my skin is reddened under where the electrodes were placed. Is this dangerous?**

A. No! With proper dosage, there is occasionally a reactive hyperemia (increase of blood flow to the area.) This will disappear in a short time. If there is a burning sensation, advise the physician or medical technician immediately.

**Q. My electric signal treatment was combined with the vasopneumatic device or suction cups. I enjoyed the pulsing massage sensation but it left some red rings on the skin under the suction cups. Was I burned and is this harmful?**

A. No! With some skin types, especially those with a fair complexion, a suction-induced redness may appear, but it is temporary and should disappear shortly. The redness indicates a measurable increase in the blood flow to the area. Not only does the vacuum pulsing feel good, but it produces a rapid increase of blood circulation under the electrodes and thus enhances the conductivity of the EST current entering the body.

**Q. How many treatments are necessary?**

A. Electric signal treatment (EST) protocols are similar to drug treatment regimens...It normally takes some sort of prolonged time period. The number of EST treatments applied to a patient will usually depend upon that individual patient's specific medical condition as well as the time that this condition has existed. Typically, the prescribing clinician will ask you to receive EST treatments on a regular schedule for a fixed period of time. After that time, the clinician will reevaluate your condition and the progress that was made with EST treatment. The average individual EST treatment time varies between 15-30 minutes. It is extremely important to complete the protocol regimen prescribed by your physician. Patient compliance absolutely affects treatment outcome.

**Q. My doctor is treating me with an EST combined protocol for my chronic migraine headaches and my pain was gone after just a few treatments, yet my doctor wants me to continue have more treatments. Is this really necessary?**

A. Better safe than sorry! Research documentation and published medical reports provide the doctor with information describing applications and how many EST treatments are normally necessary for achieving resolution and long-lasting results.

**Q. I have had five or six EST treatments and even though I feel somewhat better, I still have some pain. Should I continue treatments?**

A. Discuss this with your physician as a modification of your EST treatment protocol may be indicated. In most pain syndromes and indications, Electric Signal Treatment (EST) is very successful; however, there is NO absolute way to guarantee complete success in all patients. A clinical "review of findings report" for EST treatment results has indicated that as many as 10-15% of EST treated patients will claim that they received little, if any, appreciable pain relief. For this reason, other treatment options should be added, combined or considered. It is worth mentioning that during the EST treatment protocol regimen, the EST treatment progress toward patient success can occasionally be more subtle than other therapeutic methods. You should notify and discuss your treatment options with your physician or medical professional.

**Q. Are there any negative side effects that I should be concerned about?**

A. There are minimal side effects associated with EST treatments. Depending upon the individual patient and their specific medical condition, some side effects could be: relaxed or fatigued sensation, mild headache, increased bowel activity, increased energy level, muscle soreness (over-exercised sensation) or that the original pain seems to have moved to new anatomical location. Discuss side effects with your physician.



#1 PAIN & CIRCULATORY TREATMENT