

NeuroCare™

WHITE PAPER

INTRODUCTION

How These FDA Indications Can Apply Within Your Practice

- **INCREASE LOCAL BLOOD CIRCULATION (Move out Edema)**
- **MUSCLE RE-EDUCATION**
- **RELAXATION OF MUSCLE SPASMS**
- **MAINTAINING OR INCREASING RANGE OF MOTION**
- **PREVENTION OR RETARDATION OF DISUSE ATROPHY**
- **IMMEDIATE POSTSURGICAL STIMULATION OF CALF MUSCLES TO PREVENT VENOUS THROMBOSIS**



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Expect Results™

Thank you for taking the time to investigate how NeuroCare™ can benefit your practice and your patients. We believe that you will come to find that the one of a kind NeuroCare™ technology, though elegantly simple, can accomplish significantly superior medical outcomes for your patients. Better results achieved in shorter time frames are the key to building and maintaining a thriving practice no matter what your specialty is. Getting patient results not possible at any other clinic in your area is also key.

By reading this White Paper you will come to understand how the world's only "True Tesla"™ technology can move out edema, increase local circulation, identify and correct muscle strength imbalances and reverse and retard muscle disuse atrophy while also relaxing muscle spasms better than any other medical device available today.

You and your patients will be surprised at how the body's own healing mechanisms are allowed to quickly resolve a wide variety of maladies once muscle strength is balanced and regenerated, muscle spasms are relaxed, edema is moved out and proper circulation is restored via the world's "most powerful yet most gentle" muscle contractions achievable only with NeuroCare's remarkable application of Nikola Tesla's Alternating Current technology.

NeuroCare's superior outcomes are the result of over twenty years of research by NeuroCare's team of top healthcare researchers, scientists and practitioners in monitoring more than a million NeuroCare™ treatments to develop NeuroCare's proprietary protocols which only work with NeuroCare's technology when applied properly as instructed. Like thousands of other patients and medical professionals worldwide, you will come to find that tissues stimulated with NeuroCare's high voltage (0 to 440 volts) low amperage (Max just over 4 milliamps) output via NeuroCare's special form of AC can quickly return to normal function once the body's healing mechanisms are allowed to function without the inhibition of edema, poor circulation and muscle issues.

The following information is not meant to be an exhaustive review of all the applications possible using NeuroCare™ technology, but rather a general overview of how the technology works and an introduction to NeuroCare's proven treatment protocols refined by the aforementioned exhaustive monitoring of more than a million treatments over the past twenty years. With NeuroCare's superb training and applications support you will avoid the "failure paths" and generate happy patients like never before.

Within the following pages you will be given information specific to many applications for NeuroCare's leading technology along with some introductory product information and comparisons.

If you would like to know more, analyze a review of the literature or see supporting studies and testimonials, please ask your representative, review our website www.neurocare.com, e-mail us or call our toll-free number. In-depth training videos, comprehensive training manuals and Telephonic or On-site Applications In-service training are also available for you and your staff. CME credits can often be earned by attending a NeuroCare™ training seminar.

Now, read on to learn why at NeuroCare™ our slogan is "Expect Results"™.

Sincerely,

Gregory L. Westfall,
Vice President of Sales and Marketing
Email: gw@neurocare.com

The NeuroCare™ Difference

NeuroCare's flagship product, the NC10004PXP is an FDA registered Neuromuscular Electronic Stimulator (NMES). NeuroCare's technology was registered with the FDA and granted a 510k clearance to begin marketing in August 1993. It is marketed and used by medical professionals and patients via prescription worldwide. NeuroCare is a high voltage (max. 440 V) and very low amperage (.1-4.4 milliamps), AC output Neuromuscular Electrical Stimulator.

There are many EMS units marketed today and any of them can stimulate muscle contractions though few can safely output enough voltage to overcome high edema levels and get the current to the muscles of diabetic neuropathy patients with high fluid build-up. While the current will go first to the best conductor, which is the fluid build up in patients suffering from edema, when the "active" muscle is invoked or stimulated by an electrical current the muscle will contract.

To overcome a problem with an injured muscle, a muscle in spasm or an atrophied muscle due to disuse and/or lifestyle choices, disease, injury or overuse, the muscle involved must be recruited. When electricity invokes a muscle contraction it goes first to the active muscles if there is not a large build up of fluid such as is the case with many patients. As more current is sent to the muscle the muscle fiber becomes "saturated". The excess current then needs to go to the next acceptable muscle fiber. During this saturation process other DC output electrical stim units stop at the active muscle fiber. NeuroCare's proprietary high voltage low amperage AC output allows this saturation process to continue until the inactive or muscle fibers in disuse are involved. This process does not occur with DC output electrical stim devices.

DC output units, whether using 9-volt batteries or wall power, all have a maximum of a 125V output at 90 milliamps and are not capable of recruiting the inactive muscles, yet most patients only tolerate around 30 volts of DC output at around 10 milliamps and more output can actually burn a patient. NeuroCare™ overcomes this limitation common to DC output systems by using a 12-volt input with a maximum 440V AC output. Because NeuroCare™ is an AC output device, the amperage is lower (max. 4.4 milliamp) and therefore less painful during the treatment.

Muscle contractions are generally stimulated with voltage and general rule in muscle stimulation is that the higher the amperage the higher the patient discomfort. This is why patients can tolerate much higher voltage with NeuroCare's AC output to generate maximal muscle contractions.

Muscle contractions are the key to the effectiveness of all NMES units. Research on the efficacy of NMES technology has shown one commonality in all of the studies and that is "The greater the muscle contractions, the faster the healing". There is no mystery to this equation. It is not the shape of the waveform or the use of various frequencies that can somehow mysteriously accomplish remarkable results. It is the muscle contractions themselves that move out the edema and increase local blood circulation empowering the return to normal functioning. The body is simply allowed to heal itself.

The treatments simulate exercise and just as in an exercise regime at the gym, 45-minutes on the NC results in muscle fatigue and muscle recruitment. Unlike exercising at the gym the NC treatments can be targeted via NeuroCare's copyrighted protocols to individualized muscle groups and adjusted to work only those isolated muscles to re-establish balance within the muscular system.

Old Theories Disproved

The results achieved with NeuroCare's "True Tesla"[™] technology have disproved some long-held theories, and have opened the door to some exciting new research in medicine, as well as answering the problems found when using previous modalities of this type that did not lower the amperage when increasing voltage.

That is the "True Tesla"[™] Secret to "The NeuroCare[™] Difference".

If muscle contractions are the key to restoring normal function, then it makes sense that the ultimate NMES system should be able to generate optimal muscle contractions over an extended period of time in a manner that patients can tolerate without burning or injury. This is only possible with NeuroCare's high voltage low amperage AC output technology delivered in a proprietary manner to prevent muscle acclimation and habituation.

APPLICATIONS

FDA listed uses: 1) Increasing local blood circulation (integrally tied to moving out edema); 2) Muscle re-education; 3) Relaxation of muscle spasm; 4) Maintaining or increasing range of motion; 5) Prevention or retardation of disuse atrophy; 6) Immediate post-surgical stimulation of calf muscles to prevent venous thrombosis. Singularly or collectively these indications are almost always the cause of lingering symptoms when soft tissue or decreased circulatory problems are involved.

Increased local circulation via Muscle Stimulation has a broad, clinical applicability, both in terms relating to rehabilitation and in general conditioning of healthy skeletal muscle. NeuroCare[™] technology effectively treats conditions that are a result of, or exacerbated by, the existence of a chronic involuntary muscle contraction due to spasm. After years of testing, NeuroCare has determined that optimal results can be consistently achieved with the application of a precisely metered and controlled very specific electrical wave-form to the underlying skeletal musculature to effectively relieve chronic muscle spasms. In a number of disorders, chronic spasms results in local swelling and increased pressure on the adjacent tissue. If nerve roots are in this field, a reduction of the swelling and a disruption of the chronic spasm can have a dramatic impact on the patient's condition.

NeuroCare[™] treatments offer ***genuine therapeutic intervention***. The XP works with the underlying causes and is not merely a symptomatic treatment attempting to disrupt pain impulses. If specific skeletal musculature is involved in chronic spasm pre-existing joint dysfunction and pain may be exacerbated. In these cases an effective, well tolerated, and safe method of treatment can be achieved with NeuroCare[™]. Many clinicians realign the spine without addressing the soft tissue issues such as spasms that pulled the spine out of alignment in the first place. Without addressing these soft tissue issues that created a bio-terrain conducive for the development of the misalignment in the first place, the problem is sure to reoccur. A muscle that is in spasm is involuntarily contracting or shortening and it pulls on the surrounding skeletal structure like a tightened string on a bow. Such spasms must be relaxed and the underlying muscle strength imbalances resolved to create sustainable long term resolution of the condition. NeuroCare[™] can isolate individual muscles or entire ipsilateral groups that may have atrophied and increase their girth and strength without invoking their opposing antagonistic muscle groups. This isolation capability differs markedly from traditional bilateral exercise which merely deepens imbalances by strengthening all of the muscles, both weak and strong, simultaneously.

I. Increase Local Blood Circulation (Move out Edema)

Blood circulation is the flow of blood through the body. The blood is responsible for carrying nutrients to the cells and removing waste, both of which are required to maintain healthy tissue.

NeuroCare™ offers an effective treatment for acute soft tissue injury with attendant swelling, and tenderness. The rhythmic muscle contraction and relaxation improves circulation, thus reducing the swelling and tenderness. Improved blood circulation is tied to moving out edema and moving the lymphatic fluids.

Electrical stimulation increases local circulation obtaining gratifying results post trauma or in the post surgical period following open joint surgery and arthroscopic procedures. (See Review of Studies)

Beneficial results have been achieved, but not limited to the following areas: Chronic Back and Neck pain patients, Fibromyalgia, many types of Neuropathy, Diabetic Feet, Stasis Ulcers, Decubitus and Pressure Ulcers (bedsores), Lesions and Wounds, Sports Injuries, Arthritis, Bedridden patients, Paraplegics and Quadriplegics, Traumatic Brain Injury patients, Range of Motion, Lymphedema patients, Pre and Post Surgical patients, Guillain Barre, Parkinsons, Raynauds, Thoracic Outlet.

II. Muscle Re-Education

Muscles perform in conjunction with regulated and opposing muscles. If one group is used more than its opposing group, an imbalance occurs resulting in the need to re-educate the weaker, overused muscle group (i.e. repetitive movements for an extended amount of time resulting from: hobbies, occupation, sports, etc.). Numbness or tingling in the arms may be a symptom of this imbalance. This imbalance may be symptomatic of burning or pain in the thumb or wrist, especially at night. With NeuroCare™, an individual muscle group can be selected, and then worked individually to overcome this imbalance.

Beneficial results have been achieved, but not limited to the following areas: Muscle Sculpting, Increased Muscle Girth, Occupational overuse, Repetitive Motion Deficit, Carpal Tunnel Syndrome, Incontinence, Low Back and Neck Pain, Fall Prevention due to improved nerve communication from resolved Neuropathy, Bedridden patients etc.

(A) Application of the device to the paraspinous and paravertebral musculature, as well as to the abdominal wall musculature, helps to strengthen and stabilize the back. This can be done while the patient's spine is held motionless (e.g. while sitting or lying down).

III. Relaxation Of Muscle Spasm

Muscle spasm is a sudden, violent, sustained, involuntary contraction of a muscle or group of muscles resulting from a local response to a painful condition.

Chronic muscle contraction and cramping often results in areas of localized pain.

Beneficial results have been achieved in these general areas: Cerebral Palsy, Multiple Sclerosis, Sprains, Strains, Whiplash, Acute and Chronic Back and Neck Pain, TMJ and spasticity commonly seen in quadriplegics, paraplegics and CVA patients.

Physicians applying NeuroCare™ to these isolated areas can have dramatic results for patients. There is no more effective means to relax a muscle in spasm than NeuroCare™! NeuroCare™ has been shown to be effective at alleviating acute and chronic muscle spasm, with its accompanying pain, i.e. the paraspinous and paravertebral musculature.

IV. Maintaining Or Increasing Range Of Motion

Range of Motion (ROM) is the degree of movement a joint has from maximum extension (straightening) to maximum flexion (bending).

Beneficial results have been achieved in these general areas: Post immobilization due to a fracture, sedentary and withdrawn life styles, post-surgical period following open joint surgery or arthroscopic procedures, and whenever there is a soft tissue injury or involvement or restricted circulation caused by, but not limited to sports injuries, strains, sprains, bursitis, tendonitis, arthritis and edema.

V. Prevention Or Retardation Of Disuse Atrophy

Disuse atrophy is the shrinking or wasting away of tissue or organ due to a reduction in the size or number of cells resulting from inadequate cell nutrition due to poor circulation and disuse. This disuse can be a result from confinement, immobilization or lack of exercise.

Disuse atrophy occurs post surgically and post injury. When a patient is immobilized or experiences limited physical activity for whatever reason, there is the potential for disuse atrophy. By using the NeuroCare™ as soon as possible the disuse atrophy can be substantially retarded, prevented, or reversed in the case of existing atrophied muscles as a result of stroke or disuse.

Beneficial results have been achieved, but not limited to the following areas: quadriplegics, paraplegics, CVA (stroke), fractures requiring a cast/immobilization, post trauma of any sort (sport or work injury, sprains, strains), and bedridden patients.

VI. Immediate Postsurgical Stimulation Of Calf Muscles To Prevent Venous Thrombosis

Venous thrombosis is a condition where blood changes from a liquid to a solid state, producing a blood clot usually as a result of immobility (i.e. post surgical).

In terms of more purely vascular pathologies, such as venous thrombosis secondary to stasis, the increased local blood circulation attendant to the use of NeuroCare™ offers an effective treatment to keep the blood from stagnating or flow from slowing to the point where a thrombus can form.

Using NeuroCare™ post-surgically has been shown to help assist in preventing Deep Venous Thrombosis (DVT).

VII. NeuroCare (NMES) and TENS/EMS Compared

EMS (Electrical Muscle Stimulator) is a general term for units used to stimulate muscles. There are many types of EMS units on the market. TENS (Short for Transcutaneous Electrical Nerve Stimulation) units are different from NMES units in that the indication for TENS is pain, but TENS units are still EMS devices. Neuromuscular electrical stimulation (NMES) units are therapeutic.

Just as a narcotic and an anti-inflammatory agent can both be used to relieve pain through different mechanisms of operation, the NeuroCare™ device (a neuromuscular electrical stimulator) and the TENS both relieve pain through differing mechanisms of action. The two medicines relieve pain through *different* neuro mechanisms, as do the two modalities. The TENS is used to *diffuse* the pain signal. When any of the FDA indications are present, the NeuroCare™ system relieves pain by eliminating the cause. As a reminder, the indications are: 1) Increasing local blood circulation (Moving out edema); 2) Muscle re-education; 3) Relaxation of muscle spasm; 4) Maintaining or increasing range of motion; 5) Prevention or retardation of disuse atrophy; 6) Immediate post-surgical stimulation of calf muscles to prevent venous thrombosis.

The indications above deal with the core problems that cause most pain. Rather than cover up the pain signals as a TENS unit does, which is like taking the batteries out of a fire alarm while the fire rages, the NeuroCare™ approach is to resolve the CAUSE of the pain so that the pain can be eliminated.

Some types of EMS units are: 1) Direct current, low-voltage; 2) Direct current, high-voltage; 3) Alternating current, low-voltage; 4) Alternating current, high-voltage; 5) Interferential; 6) H-wave; 7) Micro current; and 8) TENS.

All of the different units available today, other than the NeuroCare 1000XP series, recruit the *active muscle fibers*, when in reality it is the *inactive muscle fibers* which need to be recruited for patients to see a marked improvement. ***NeuroCare simulates exercise through deep muscle contractions which recruit the inactive muscle fibers to the point of fatigue. By fatiguing the inactive muscle fibers NeuroCare can build the compromised muscle back to a healthy state. There is currently no other device on the market today that can actually increase the girth of muscles in this manner.*** This capability plays a critical role in the treatment of many chronic pain conditions (By treating the muscle imbalance “CAUSE”) and other conditions such as Incontinence which finds its genesis in severely atrophied pelvic floor muscles that do not respond to Kegel exercises until and unless they are re-strengthened through targeted resistance exercise via NeuroCare. ***The AC output of the NeuroCare device empowers it to overcome the resistance of distance that limits the effectiveness of other EMS devices to work certain deep muscle groups. Because of this, NeuroCare is ideally suited to overcome the resistance of distance required to isolate and strengthen the deep pelvic floor muscles***

Some of the other DC output EMS units are unable to overcome the patient-compliance problems due to the pain invoked at the voltage output needed to elicit significant muscle contractions, so the makers of those devices have resorted to changing the “wave” structure (H-wave & micro-current). Since this claim alters the FDA indications for these units, the FDA does not accept them. It should now be very clear that NeuroCare™ is NOT one of these units! That is why NeuroCare can achieve results not possible with these other units. Expect Results™

NeuroCare is basically a neuromuscular electrical stimulator registered by FDA as such. Simply stated NeuroCare complies with all of the FDA’s requirements, is comfortable to the patient and simulates a good physical workout via the most powerful muscle contractions possible without injury to the patient. The results obtained by NeuroCare are all explainable within the claims cleared by the FDA.

The Neurocare 10004PXP (XP) Offers the Highest Voltage Possible At the Lowest Amperage

The XP has a higher output than any other electrical stimulator on the market today. Where other units invoke the “active” muscle fibers at a maximum of 125 volts at 90 milliamps, the XP can invoke the “inactive” muscle fibers (inactive due to injury, trauma, disuse, etc.) at a maximum of 440 volts. Amperage is the painful part of electricity. Other EMS units achieve the 125 volts at 90 milliamps of current. The XP achieves the 440 volts at just over 4 milliamps of current. Patients can normally tolerate a maximum of about 10 milliamps of current, therefore normal EMS units very seldom reach the potential of 90 milliamps and 125 volts, thus they cannot “saturate” the “active” muscle fibers to reach the “inactive” muscle fibers. Ten milliamps on normal muscle stimulators is 30 volts. Four point four milliamps on the XP is 440 volts. The reason NeuroCare™ has this ability is that it uses a special type of AC (alternating current) output, whereas the other stimulators use DC (direct current) output. NeuroCare’s proprietary technology is unmatched in the history of NeuroMuscular Electrical Stimulator devices and the results prove it.

Simulated Exercise That Really Works

The machine simulates exercise not only in the “active” muscles but also deep into the “inactive” or injured muscles, thus allowing them to be strengthened and re-educated. The XP can do this, even though the patient cannot, because its unique AC output of electricity does not invoke the reflex arc mechanism. NeuroCare is thus able to work the inactive muscles without the use or need of medications (narcotics or steroids). The NeuroCare device is so safe it has been cleared for use by patients in the privacy of their own home under the order of a healthcare provider. Home use allows the patient to have longer treatments for a longer period of time than would normally be feasible within a clinical setting. NeuroCare provides clinical telephone technical support back-up for all of its Centers of Excellence clinics for patients, their insurance companies or their healthcare providers on a 24-hour basis, at no extra charge. With a proper prescription NeuroCare will even rent the equipment direct to patients if there is not a local provider ready to fill the need. Inquiries to NeuroCare™ from areas served by committed Centers of Excellence are forwarded to those clinics for service.

The Significant Advantages of a System That Can Be Used In Both the Clinic and the Home

Since NeuroCare™ treatments are not painful when properly administered up to the point of comfortable patient tolerance, patients are able to benefit from longer treatment sessions and more frequent treatments administered by themselves or their family member within the walls of their own home. The length of electro-therapy treatment is very important to accomplishing results. This is especially true with advanced cases of diabetic neuropathy with serious “Pitting” and many instances of severely atrophied pelvic floor muscles in incontinent patients. The XP’s portability allows patient’s to have the option of receiving treatments closer together, even three or four times a day, as prescribed. Patients can also take the system with them on trips where their symptoms often manifest far away from traditional known or viable treatment options. This benefit is three-fold; the patient becomes a participant in his or her own wellness program, the patient gets a more rapid recovery, and the patient is generally able to continue their normal work/life style without the need for multiple visits each day back to the clinic taking up valuable staff time in the process. Clinicians also benefit from the passive income generated as patients use the equipment in a complimentary manner to the in-office guidance and management of their malady.

NeuroCare™ is not new in the sense of a unique form of electronic modality. The technology is nothing more than a brilliant application of the invention of Nikola Tesla, one of the top inventors of all time, combined with modern day proprietary innovations resulting in a simple neuromuscular electronic stimulator that features dramatic improvements in effectiveness over all predecessors and emulators. Keep in mind that the NeuroCare™ innovations are not bells and whistles with unnecessary, ineffective frequency tweaks and in depth programming hype. The innovations are anchored in the results only obtainable via the much deeper yet more comfortable muscle contractions provided by NeuroCare's proprietary "True Tesla™" technology. Electronic modalities have been and are now an even more attractive therapy to treat the health problems mentioned throughout this paper. Results prove NeuroCare™ just happens to have the most effective unit for a wide variety of maladies.

VIII. AN ADDED PLUS: Significant Pain Relief by focusing on the CAUSE

Although pain relief was not a design goal in the development of NeuroCare's XP device and is not even recognized as a standard use for NMES devices, Physicians and Practitioners report their patients experience "*outstanding results* in pain relief" after as few as one NeuroCare™ treatment. A remarkable and interesting quality of the NeuroCare™ device is the sustained benefit in chronic, painful conditions. The initial results are similar to the effects seen with the use of a TENS unit. However, the TENS signal is designed to "block" the pain signal for a short period of time, with a subsequent recurrence of the underlying pain. NeuroCare™ curiously produces a very different response, in that it is designed to treat what is causing the pain (i.e. by increasing local circulation, relaxation of muscle spasm, prevention/retardation of disuse atrophy, muscle re-education and maintaining or increasing range of motion). Patients usually have *prompt* pain reduction or elimination, and continue to experience this analgesia for long periods of time long after the treatment regimen has ended. Typical pain relief continues for 24 to 48 hours after a 45-minute treatment. Depending upon the diagnosis, many patients have reported permanent pain relief after finishing their programmed treatments, which makes sense. If the CAUSE of the pain has been removed, then the pain should also remain eradicated. NeuroCare simply attacks the roots of the problem instead of hacking at the leaves.

NeuroCare's Extensive, Detailed and Copyrighted Treatment Protocols and Diagnostic Manuals

Physicians and Practitioners using NeuroCare's proprietary technology in the manner shown in NeuroCare's extensive and detailed copyrighted treatment protocols and diagnostic manuals are particularly impressed with their patient's reports of pain alleviation and return of pain free range of motion. NeuroCare's efficacy in the treatment of pain in the neck and back by eliminating the cause has also been a great source of patient satisfaction and clinician gratification even dealing with acute and chronic pain conditions in almost any part of the body but especially anywhere on the spine from the lumbosacral region to the cervical all the way to the Atlas. For many patients who have experienced an acute exacerbation of chronic back disease, one 45-minute treatment session can often provide dramatic pain relief as the cause is dealt managed and eliminated.. (Just as the pain will return after using an NSAID, pain can also return after even after a NeuroCare™ treatment, if the patient does not continue treatments to solve the problem causing the pain. Subsequent daily use of the device for a period of a few days to a few weeks until the patient has completed the treatment regimen by re-educating and strengthening the specific muscle groups are crucial to obtaining sustainable long term pain relief and results. Patients are made to understand this as part of NeuroCare's patient interaction guidance for clinicians provided in NeuroCare's extensive training. Patients so properly treated are usually able to return to full, active work and function in a relatively short period of time compared to any other treatment options. Expect Results!

Physicians, Physicians Assistants, Practitioners of all types and Physical Therapists find that this method of treating the cause not only benefits their patient, it also allows their core existing services and therapies to be more productive and tolerated to help with the patient's recovery. NeuroCare™ technology has been shown to compliment almost every aspect of any clinician's pain management plan for their patients in one manner or another. With NeuroCare's results and passive income via home use option, clinicians are able to see results in more patients, more rapidly. They often find NeuroCare's superior and faster back to work capabilities mean significant cost savings to insurance and self-insured companies as unnecessary surgeries are avoided and pain meds are eliminated with all of their attendant risks and side effects to say nothing of operating heavy equipment on pain meds..

Sports Medicine and NeuroCare™: The Perfect Combination

NeuroCare™ and its copyrighted treatment protocols have widespread application to the maintenance of already healthy skeletal muscle tissue, as well as general athletic conditioning. Certain muscle groups in the body are notoriously difficult to exercise optimally and easily. These include the gastrocnemius, the gluteus maximus as well as the abdominal wall musculature and the paraspinal and paravertebral musculature. In order to properly exercise muscle groups, the patient must utilize highly specialized weight machines. Even while doing this, certain exercises can place enormous stress on the body and aggravate underlying orthopedic conditions. An example would be doing squats in order to build up the gluteus maximus. This can aggravate a pre-existing accentuation of a lumbar lordosis and if there is any component of disc disease present, this will impose an effective limitation to the amount of exercise the patient is able to do, as well as exacerbating the lower back disease. With the use of the NeuroCare™ technology as guided in NeuroCare™ exclusive Protocol Manuals, and as supported by NeuroCare's applications experts for difficult cases, the muscle groups can be isolated and worked maximally. In the case of the gluteus maximus, it is very simple to isolate this muscle and re-educate it without placing any significant strain across the lower back.

The Team's Secret Weapon

Physicians, Physicians Assistants, Practitioners of all types and Physical Therapists along with wise Athletic Trainers who have seen the folly of the "Tough it out" mentality, find that NeuroCare's approach of treating the cause or the source of the pain and/or guarding against muscle strength imbalances has not only benefited their patient/athletes, it has allowed their therapy to be more productive in the patient's recovery or in preventing injury. Many seasoned Athletic Trainers have reported that there is no better way to move out edema after the big game than with NeuroCare™.

The Pros expect results from NeuroCare™ and NeuroCare delivers like the one of a kind invention it is.

"I wouldn't think of trying to field any kind of Athletic team without NeuroCare on hand".

Gary Craner, Former Boise State Athletic Trainer,

Former President of the National Athletic Trainers Association

The First Inductee ever into the National Athletic Trainers Association Hall of Fame

IX. Documented Clinical Results

Physicians and Practitioners working with **Diabetic Foot Condition**, have commented, “The results seen have truly been a *medical breakthrough*.” In just one to two weeks patients are able to see granulation of deep wounds (stage four) and bring about deep wound healing in three to six weeks (this is due to increase in local blood circulation). Patients who have been scheduled for amputation have been brought back to healthy tissue in just six to eight days. (Visual results are generally immediate). Patients diagnosed with Diabetic Neuropathy for years have feeling return in the first day to week.

Physicians, Practitioners, Physical Therapists, and Occupational Health Directors from major industry have reported that, “Workers in jeopardy of losing their jobs because of “Occupational Overuse” have been successfully treated with NeuroCare™ and are thus able to remain in their chosen occupation.”

TECHNICAL INFORMATION

NeuroCare™ technology uses a biphasic pyramidal wave with a frequency of 47 Hz. Duty cycles are fixed at 1.5 seconds on and 1.8 seconds off. There is no ramp time. These settings are preset with the intensity being the only variable. The elegant simplicity of the unit allows a consistently accurate treatment to be administered *by the patient or caregiver in the patient’s home every time*. In medicine there is always a standard, but until NeuroCare™ it has been impossible to standardize electro-therapy treatments. Other EMS units often have so many variable settings that there can be no standardization of treatment between patients, even within the clinic setting. NeuroCare’s standardization has allowed practitioners to treat all patients more accurately and consistently when using electro-therapy.

NeuroCare’s technology has combined high voltage, ultra low amperage and built-in parameters for ease and simplicity of use to achieve its remarkable effectiveness. NeuroCare’s technology is not unique due to its packaging, number of outputs, or portability. These are all very desirable features but they are NOT unique. What separates NeuroCare™ technology from other electrical stimulators is the aforementioned extreme specificity of its electrical output and its preset parameters in combination with its True Tesla™ AC output. As 104.5 and 105.1 on the radio dial are unique, very far apart practically and specifically different, so stands NeuroCare™ apart from all other modalities.

Over the past twenty years NeuroCare™ has determined that any deviation from its core treatment parameters tends to result in less efficacious treatments. Accordingly, these parameters, which are automated inside the unit in a proprietary manner, are not adjustable by the operator, thus the operator does not run the risk of producing a sub optimal result. The placement of the electrodes is not critical, which is a tremendous boost to the “real world” use of these modalities. It is possible to overlap the electrodes and not short out. However, they must not be used face to face. This allows the operator a greatly enhanced degree of flexibility for an individual’s best pad placement determination.

INTRODUCTION TO NeuroCare™ THERAPY

If you are familiar with electronic modalities, but have never used NeuroCare™ technology, you will be pleasantly surprised. The combination of NeuroCare™ with its world class support and copyrighted Treatment Protocols is proving itself in multiple settings within the healthcare community.

NeuroCare™ is a non-invasive NeuroMuscular Electrical Stimulation (NMES) therapy used to increase local blood circulation, reduce edema (swelling), relax muscle spasms, prevent, retard or reverse disuse muscle atrophy, re-educate and strengthen muscle groups, maintain or increase range of motion and prevent deep venous thrombosis. NeuroCare™ Therapy has been shown to be a dramatically effective treatment for: soft tissue injuries (i.e. back strains and sprains), TMJ, stress induced muscle problems (i.e. cervical/neck spasms), Diabetic Neuropathy, pressure sores, Decubitus ulcers (i.e. stage four), lack of circulation, range of motion, repetitive deficits (Carpal Tunnel Syndrome, Occupational overuse (i.e. low back) or incidences where soft tissue trauma has occurred. It has also emerged as one of the most effective treatments for Over Active Bladder and Incontinence. There have even been amazing results when used with SCI patients.

There are two basic models of NMES units manufactured by NeuroCare™. Both units are in the NC1000 series of products, with the 4PXP coming with its own portable carrying case. Both units feature four separate channels which utilize two electrodes each. Leadwire bifurcation cables are available to expand the number of channels if desired making it possible to use many more electrodes than the standard four lead-eight electrode setup. Both the clinical 4CXP and the more portable 4PXP sell for the same price and both pretty much offer the same capabilities but the clinical model, called the NC10004CXP has an enhanced power supply to meet the biomedical requirements of Hospitals. Both units are actually quite portable and safe for in-home use by the patient though the clinical unit is really designed to stick around the office. The system is always used by order of a practitioner licensed to do so. Because the system is a medical device, plans of care that include home use must be ordered or prescribed by a licensed practitioner authorized to do so in their respective locale.

A Unique Combination of In-Clinic Treatments with Home Treatments: The Best of Both Worlds!

Many clinics involve patients in their treatment regimen in a “Partnership” arrangement that improves outcomes and patient satisfaction while reducing clinic staff time demands by educating patients to treat themselves in the privacy of their own home. Depending on the malady, patients often significantly benefit from the increased accessibility to the treatments made possible by home use which allow for multiple treatments per day for longer periods of time than would be cost effective or feasible within the clinic setting alone. This is especially true in cases of severe Neuropathies, Incontinence and Spinal Cord Injuries to name a few of the many applications which benefit from home use.

The combined clinic/home use scenario also can provide clinics with the best of both worlds by optimizing treatment outcomes while creating passive income streams for the clinic as well. Patients get the needed training, guidance and supervision with the clinic visits and treatments while benefitting from the increased accessibility home use provides. In this scenario home use significantly compliments the in-office treatments and support with better outcomes achieved on a timelier basis in a manner that allows the clinic patients to have more treatment time without creating patient flow problems at the clinic, thus allowing the clinic to treat a larger universe of patients without increasing staff. Everybody wins!

It is important to note that the NeuroCare device has been registered by the FDA for both clinical and home use as a non-significant risk device specifically because of its low amperage output, even with its world leading high voltage. While it is the voltage that causes muscles to contract, it is the amperage that can injure, burn or cause reduced patient compliance from increased discomfort. Only with NeuroCare's technology can patients safely tolerate longer treatment times at higher voltages generating deeper muscle contractions without the risk of burns. This is especially important in the treatment of Neuropathy patients who cannot feel when they are being burned as can be the case with DC output systems. Such Neuropathy patients often do not have the proper circulation needed to recover from such a burn or injury. Tiny wounds or blisters can escalate into major wounds in these patients with catastrophic long term effects. Why risk it when NeuroCare™ is available with better outcomes and no risk of injury to the patient?

While many patients experience significant measurable improvement after their first treatment, most home use programs continue for an average of three months. Many patients who are not willing to make the lifestyle changes necessary to deal properly with the dietary and sedentary issues contributing to the tenacity of their problem will end up needing to purchase their own NeuroCare™ unit as their symptoms can return if the underlying core causes are not addressed.

Standard “Home Treatment Centric” Schedule

The following is a standard “Home Treatment Centric” schedule with a reduced emphasis on the in-clinic treatments. This schedule applies to many different problems and can vary with each patient and diagnosis.

1. The initial visit: Indications are discussed, treatment plan outlined, instructions for use are given and pad placement is outlined according to the copyrighted NeuroCare™ Treatment Protocol. (Appropriate ICD-9 codes are used for billing).
2. Someone on the clinic staff familiar with NeuroCare and the patients plan of care will call the patient 1-2 days after they have taken the NeuroCare™ system home, to check on the patient’s progress. If all is well the next appointment date is verified.
3. The patient is seen again after the first week of treatment and once a week thereafter for the duration of the prescribed treatment regimen. If the duration of treatment needs to be extended, a new prescription for extended service is issued by the provider with continued weekly in-clinic follow-up appointments to monitor patient progress. If a longer treatment period is required, follow up contact with the patient can be done by phone with only an occasional visit to the clinic. At completion of the treatment plan, the patient should *always* return to their prescribing practitioner for release and follow up instructions.

Many insurance companies pay for much of the system rental fee and/or in-office treatments.

NeuroCare has also worked closely with key accounts and consultants to develop proprietary proven reimbursable NeuroCare business models currently in operation in the rapid growth Skilled Nursing Facility and Home HealthCare arenas. This includes Medicare Part A and Part B covered programs. With 10,000 people a day turning 65 years old in the US alone each day, this market will continue to expand exponentially for the foreseeable future. The need for cost effective treatments that improve outcomes while cutting staff costs and professional time demands has never been greater than it is today. Old outdated skilled-staff “time intensive” treatment strategies cannot continue to serve the ever increasing demand for effective treatments as the population ages. NeuroCare also has developed several other business models that profitably employ the equipment in the service of self insured corporations and provide various elective treatment protocols to the 25% of the market fortunate enough to have the discretionary funds available to pay cash for certain services that are in high demand such as the NeuroCare™ Incontinence program, which program also often qualifies for insurance coverage under biofeedback and NeuroMuscular Re-education codes among others.

Health First Technologies, Inc. and Renua Medical’s various business models run the gamut from all cash programs to programs centered around the Medicare, managed care and private insurance reimbursable nature of the therapy provided with the system. All are available for due diligence analysis and review by interested parties that have signed Health First Technologies, Inc. NeuroCare’s confidentiality agreement.

CLINICAL STUDY EXCERPTS

“Clearly, electrical stimulation is effective in expediting recovery from surgery.... Reduced hospital stay may decrease the overall cost of patient care, contributing further benefit to the patient....”

“...the newest hope for aching backs, flabby stomachs and weak knees does sound like something out of science fiction. It’s called electrical stimulation (EMS), and it entails zapping a muscle with electricity to strengthen it. Once reserved for rehabilitating atrophied muscles, EMS is now being used to treat more subtle structural problems as well...”

“...Scientists have shown that applying EMS several times a week will make a muscle stronger, even if the patient can no longer move it voluntarily...”

“...This strengthening technique is now standard treatment in rehabilitating weakened muscles after surgery. It’s also being used to prevent muscle atrophy in arthritis patients, as well as those paralyzed from spinal cord injuries...”

“...More intriguing still is the prospect of using EMS to shore up postural weakness, an approach that may offer fresh hop to the 16 million Americans suffering from chronic back pain...”

“...Electricity does more than just build muscles...EMS can even heal skin sores and bone fractures...” “...Most cuts, sores and broken bones heal themselves, but certain chronic problems, such as bed sores and “nonunion” fractures, can linger for years...”

“...many athletes have some misconceptions regarding therapeutic modalities. Even amongst clinicians, it is difficult to find a consensus regarding treatment protocols. This can be frustrating for the clinicians, coach and athlete trying to accelerate a return to play...”

“...We’re still looking for the *ideal stimulator* - one that can strengthen without discomfort...”

These studies have established the need for electrical stimulation in the recovery of soft tissue injury and muscle development as well as increasing circulation. They have also made it very evident that at the time the studies were being conducted there was no “ideal” machine available. Since these writings, NeuroCare™ received clearance from the FDA to begin marketing and to date more than one million NeuroCare™ treatments have occurred.

The NeuroCare NC10004PXP is portable so that patients can take the unit with them and be trained to treat themselves at home. The treatment program is specially designed to identify the cause and treat the problem, all non-invasively, with comfort to the patient. The machine itself is only a tool within the highly refined and proven treatment protocol for many different maladies.

With NeuroCare’s proven treatment protocols, NMES technology has finally come of age as the respected front line treatment for a wide variety of health challenges that all respond well to the multiple benefits NeuroCare™ Therapy provides in helping to return the body to normal function.

[Study reprints available upon request]

ELECTRONIC STIMULATORS OVERVIEW

I. TENS—Transcutaneous Electric Nerve Stimulator.

A TENS unit is limited to decreasing the patient's perception of pain by inhibiting the transmission of afferent pain nerve impulses. TENS units are **applied** along the **patient's spine where the afferent signal connects to the reflex arc mechanism.**

Even though there are clinical models, TENS units are normally portable.

“TENS units are characterized by a low voltage stimulation targeted at motor nerves”, but this does **not** cause muscle contraction, without invoking a *large degree of discomfort to the patient*, and even then will only invoke “fast twitch” or small muscle groups. TENS unit output parameters are almost always 0-125 volts at 0-90 milliamps. Most patients only endure around 30 volts at 10 milliamps and beyond that it is common for patients to be burned when subjected to too much voltage at such high milliamp levels. Many Neuropathy patients have lost the functioning of the nerves in their feet to some extent and cannot feel when they are being burned by such a device. Because of the poor circulation associated with many neuropathies, such a wound could grow like many scratches do in these patients into a wound that could threaten the limb with amputation unless NeuroCare™ is finally prescribed.

II. NMES—Neuromuscular Electronic Stimulator EMS - Electronic Muscle Stimulator. This category includes NeuroCare™ though NeuroCare is the only True Tesla AC output System on the market.

The NMES not only stimulates the muscles directly, but also the motor nerves, allowing a broader, **therapeutic treatment.** It is applied to the injured muscle or area of restricted circulation. (i.e. for a Hamstring the NMES would be used on the Hamstring)

The NMES is available as a clinical or portable modality established to treat a variety of musculoskeletal, neuromuscular, and vascular conditions. Through studies, it has been established that clinical treatments administered in the office often alone cannot achieve the desired results for patients with more advanced problems or for those who prefer the privacy of their home for treatments such as those provided for Incontinence. Such patients significantly benefit from the use of the portable NeuroCare™ NMES device at home to improve the effectiveness of their treatment program. Best results for each treatment require a treatment duration lasting 45 minutes. Many patients benefit from multiple treatments each day or longer treatments administered by themselves in their own home. Participating clinics can have hundreds of units out in the marketplace treating patients in their own homes more cost effectively than just relying on clinically administered treatments alone. Some patients require four or five treatments a day when they are trying to save a limb from amputation. This can last for two or three weeks in especially advanced and challenging cases eventually dropping down to just one treatment per day until the condition is stabilized. Many patients who refuse to make the lifestyle and dietary changes needed to prevent a reoccurrence of the problem will need NeuroCare NMES treatments several times a week for the rest of their lives. Many patients in

Skilled Nursing facilities report that their NeuroCare™ treatment is the highlight of their day with all of the pain relief it provides relaxing muscles in spasm and increasing local circulation. Patients who treat themselves at home consistently report that they appreciate the convenience and opportunity to partner with their healthcare provider in getting the care they need. Such home treatments allow for a more aggressive treatment protocol to be pursued with the patient a willing participant in their own treatment program. Most such patients are usually able to continue working while getting well with no time lost from work.

A Neuromuscular Electronic Stimulator (NMES) invokes the muscle contraction through the muscle itself. Most DC output NMES providers find that patient tolerance peaks at low voltage (30 volts) with moderate amperage (usually capped at 10 milliamps per patient tolerance). However, even this level of DC output amperage can be painful to the patient and only minimal (5-15 minute) treatments are achievable at higher output settings. This treatment time limitation for DC output systems at higher output settings is a critical limitation since the duration of each treatment has been found to be vitally linked to the results achieved.

The NeuroCare NC10004PXP is a portable Neuromuscular Electric Stimulator using high voltage with very low amperage (average: 440 volts and 0-4.4 milliamps). This low amperage high voltage output configuration allows patients to easily tolerate and enjoy treatments lasting for 45 minutes and longer with no possibility of injury. (Muscle fibers need treatments to last this long in order to properly fatigue thus allowing re-education and strengthening, as well as increasing the circulation-evidenced through laser doppler studies).

ELECTROTHERAPY from Wikipedia, the free encyclopedia

Electrotherapy is the use of electrical energy in the treatment of impairments of health and conditions of abnormal functioning.⁽¹⁾ In medicine, the term *electrotherapy* can apply to a variety of treatments, including the use of electrical devices such as deep brain stimulators for neurological disease. The term has also been applied specifically to the use of electrical current to speed wound healing. Additionally, the term “electrotherapy” has also been applied to a range of alternative medical devices and treatments.

HISTORY

In 1855 Guillaume Duchenne, the father of electrotherapy, announced that alternating was superior to direct current for electrotherapeutic triggering of muscle contractions.⁽²⁾ What he called the ‘warming affect’ of direct currents irritated the skin, since, at voltage strengths needed for muscle contractions, they cause the skin to blister (at the anode) and pit (at the cathode). Furthermore, with DC each contraction requiring the current to be stopped and restarted. Moreover alternating current could produce strong muscle contractions regardless of the condition of the muscle, whereas DC-induced contractions were strong if the muscle was strong and weak if the muscle was weak.

Since that time almost all rehabilitation involving muscle contraction has been done with a symmetrical twin-phase wave. In the 1940’s, however, the US War Department, investigating the application of electrical stimulation not just to retard and prevent atrophy but to restore muscle mass and strength, employed what was termed *galvanic exercise* on the atrophied hands of patients who had an ulnar nerve lesion from surgery upon a wound.⁽³⁾ These Galvanic exercises employed a monophasic wave form direct current-electrochemistry. The clinical findings were favorable, which made electrochemical therapy (ECT or EChT) an important subset of electrotherapy.

CURRENT USE

The use of electrotherapy has been widely researched and the advantages have been well accepted in the field of rehabilitation⁽⁴⁾ The American Physical Therapy Association acknowledges the use of Electrotherapy for⁽⁵⁾

1. Pain management Improve range of joint movement
2. Treatment of neuromuscular dysfunction Improvement of strength Improvement of motor control Retard muscle atrophy Improve local blood flow
3. Improve range of joint mobility Induce repeated stretching of contracted, shortened soft tissues
4. Tissue repair Enhance microcirculation and protein synthesis to heal wounds Restore integrity of connective and dermal tissues
5. Acute and chronic edema Accelerate absorption rate Affect blood vessel permeability Increase mobility of proteins, blood cells and lymphatic flow
6. Peripheral blood flow Induce arterial, venous and lymphatic flow
7. Iontophoresis Delivery of pharmacological agents
8. Urine and fecal incontinence Affect pelvic floor musculature to reduce pelvic pain and strengthen musculature Treatment may lead to complete continence.

Electrotherapy is used for relaxation of muscle spasms, prevention and retardation of disuse atrophy, increase of local blood circulation, muscle rehabilitation and re-education, maintaining and increasing range of motion, management of chronic and intractable pain, post-traumatic acute pain, post surgical acute pain, immediate post-surgical stimulation of muscles to prevent venous thrombosis, wound healing and drug delivery.

Reputable medical and therapy Journals have published peer-reviewed research articles that

attest to the medical properties of the various electro therapies. Yet some of the treatment effectiveness mechanisms are little understood. Therefore effectiveness and best practices for their use in some instances are still anecdotal.

Electrotherapy devices have been studied in the treatment of chronic wounds and pressure ulcers. A 1999 meta-analysis of published trials found some evidence that electrotherapy could speed the healing of such wounds, though it was unclear which devices were most effective and which types of wounds were most likely to benefit.⁽⁶⁾ However, a more detailed review by the Cochrane Library found no evidence that electromagnetic therapy, a subset of electrotherapy, was effective in healing pressure ulcers⁽⁷⁾ or venous stasis ulcers.⁽⁸⁾

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Some of the Medical Conditions which have been treated with NeuroCare™ technology since its marketing clearance by the FDA in 1993, are partially listed below. These conditions have been successfully treated by physicians (office/clinic application) and their patients (home application), following NeuroCare’s recommended Treatment Protocols.

NEUROPATHY

1.	Diabetic neuropathy	250.6x insulin dependent or not
2.	Diabetic neuropathy of the feet	355.8
3.	Peroneal palsey “drop foot”	736.79
4.	Bells Palsey of the face	351.0
5.	Trigeminal neuralgia	350.1
6.	Sciatica –see condition	355.0
7.	AIDS neuropathy	355.5
8.	Tarsal tunnel syndrome	355.5
9.	Alcoholic polyneuropathy	357.5
10.	Hereditary progressive muscle	356.2
11.	Hereditary progressive muscle dystrophy	356.1
12.	Parasthesia feet NOS	782.0
13.	Parasthesia hands NOS	782.0
14.	Ulnar nerve lesion	354.2
15.	Foot neuroma metatarsals	355.6
16.	Chemotherapy induced neuropathy	357.6
17.	Neuropathy of pernicious anemia	281.0

CHRONIC PAIN SYNDROMES

18.	Low back pain	724.2
19.	Upper back pain due to fibromyalgia	729.1
20.	Chronic tendonitis	726.90
21.	Shoulders	719.41
22.	Neck	723.1

DIABETIC ULCERS

23.	Decubitus ulcers	250.8x - 707.0 (verify area)
24.	Toes	250.8x – 707.15
25.	Heel	250.8x – 707.14
26.	Calf	250.8x – 707.12
27.	Tibial surface	250.8x – 707.10
28.	Plantar surface	250.8x -- 707.15

VENOUS INSUFFICIENCY

29.	Stasis ulcers	454.0
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PRESSURE ULCERS IN IMMOBILE PATIENTS

30.	Heel	707.0
31.	Greater trochanter	707.0
32.	Sacrum	707.0
33.	Ischial tuberosity	
34.	Page 2 conditions continued	

BONE FRACTURES (accelerates healing)

35.	“Marching/diabetic fracture” of metatarsals	825.25
36.	Avulsion fracture distal fibula	824.8
37.	Femur mid shaft fracture	821.00
38.	Femur impacted head fracture	820.09
39.	Radial head fracture	813.07
40.	Humeral head fracture	812.09
41.	Humeral mid shaft fracture	812.21
42.	Navicular fracture in wrist	814.01
43.	Fracture of radius & ulna	813
44.	Fracture of tibia & fibula	823
45.	Traumatic compression fracture in lumbar spine	805.xx
46.	Traumatic compression fracture in thoracic spine	805.xx

ISCHEMIC REST PAIN (ARTERIAL INSUFFICIENCY)

47.	Feet	443.9
48.	Calf	443.9
49.	Thigh	443.9

OSTEOPOROSIS/OSTEOARTHRITIS/DEGENERATIVE JOINT DISEASE

50.	Spontaneous compression fracture in lumbar spine	733.13
51.	Spontaneous compression fracture in thoracic spine	733.13
52.	Chronic hip pain from osteoporosis	719.45/733.00
53.	Degenerative arthritis knee	715.16
54.	Degenerative arthritis hip	715.15
55.	Degenerative arthritis ankles	715.17
56.	Osteoarthritis hand	715.14
57.	Osteomyelitis of bone (used w/systemic antibiotics)	730.x
58.	Generalized bone healing (not a diagnosis)	

DISUSE ATROPHY

59.	Bedfast conditions – lower and upper extremity wasting	728.2
60.	Muscle wasting conditions such as multiple sclerosis	340
61.	Muscle atrophy	728.2
62.	Parkinson’s disease	332.0

PARAPLEGIA AND QUADRIPLEGIA **344.1 & 344.0**

63.	Ischial tuberosity decubitus	707.09
64.	Carpal tunnel syndrome	354.0
65.	Lateral epicondylitis (Tennis elbow)	726.32
66.	Medial epicondylitis (Golfer’s elbow)	726.31
67.	Plantar fasciitis	728.71
68.	Costochondritis	733.6

Page 3 conditions continued

PERIPHERAL NERVE INJURIES

69.	Hand	755.7
70.	Forearm	755.7
71.	Upper arm	755.7
72.	Lower legs	756.5

SPORTS INJURIES & ACUTE SPRAIN/STRAIN

73.	Ankle lateral sprain first or second degree	845.00	
74.	Knee strain medial or lateral	844.1	collateral ligament 717.81
75.	Wrist	842.00	
76.	Shoulder strain	840.9	
77.	Elbow	841.00	
78.	Neck acute cervical strain	847.0	
79.	Pulled Hamstring	843.9	
80.	Muscle Spasm in Back	724.8	
81.	Muscle spasm	728.85	

MISCELLANEOUS

82.	Incontinence	788.3x	
83.	Frostbite	991-991.9	(verify location)
84.	Localized second and third degree burns	949	
85.	Post radiation burns ulcerated or poorly healing		
86.	Post polio syndrome (symptoms of)	138	
87.	Lymphedema	757.0	
88.	Raynaud's Disease	443.0	
89.	Buerger's disease	443.1	
90.	Infantile Cerebral palsy	343.	
91.	Muscular wasting & disuse	728.2	
92.	Muscle weakness	728.87	
93.	Post-surgical rehabilitation (overcoming disuse atrophy, muscle wasting, swelling/edema, increase range of motion) Use the code for the surgery or one of these listed here.		

A question to ask when determining if the NeuroCare™ treatment program may be effective with a specific diagnosis: "Does the problem or the symptom have anything to do with a muscular or nerve impairment or a restriction of circulation?"

OFFICE PROCEDURE CODES

Intake Codes: History/evaluation of problem (These fees should be set by your office according to your location)

___ 99241	Problem Focused---15 minutes	\$45.00
___ 99242	Expanded evaluation---30 minutes	\$65.00
___ 99243	Detailed evaluation----45 minutes	\$80.00
___ 99244	Comprehensive evaluation---60 minutes	\$115.00
___ 99213	Follow up visit--brief evaluation on progress no treatment/pad change--15 minutes	\$ 25.00
___ 99214	Pad placement adjustment & documentation	\$ 35.00

Testing Codes:

___ 93922	Laser Doppler	\$25.00
___ 95937	Paired Stimuli testing (per muscle group/nerve) (each additional group add \$20.00)	\$40.00 (minimum)

Treatment/Clinic Codes:

___ 97032	Treatment time (electrical stimulation)--15 minutes	\$25.00
___ 97039	Unlisted modality (specify type & time) (per 15 min. intervals)	\$25.00
___ 97112	Neuromuscular re-education of movement, balance coordination, posture & endurance---15 minutes	\$25.00
___ 9753.5	instruction in use of assistive technology devices/adaptive equipment) direct one-on-one contact by provider, each 15 minutes	
___ 97139	Unlisted physical medicine therapeutic procedure	\$45.00
___ G0281	Electrical stimulation, (unattended), to one or more areas, for chronic stage III and stage IV pressure ulcers, arterial ulcers, diabetic ulcers, and venous stasis ulcers not demonstrating measurable signs of healing after 30 days of conventional care, as part of a therapy plan of care.	

Equipment Codes:

___ E0745/E1399	Rental of NeuroCare™ unit	\$350mo.
___ E1399	with explanation General code used for name-brand ES units	
___ A4556	Electrodes: ___sm. ___ lg. \$_____ Each: Pkg. of 4	

Schedule:

Follow up call ___ days. (Document on Communication log) Date: _____

Follow up appt. ___ days or ___ week(s). (Document on Communication Log) Date: _____

Igenix Encoder Pro can help your office determine the right codes.

These are general codes and may not apply to all offices so refer to your appropriate billing codes.

TREATMENT PROTOCOLS AVAILABLE FOR

- **DIABETIC CONDITIONS**
- **INCONTINENCE**
- **TMJ (TEMPORAL MANDIBULAR JAW SYNDROME)**
- **RE-EDUCATION OF MUSCLES (POST-INJURY)**
- **PREVENT OR RETARD DISUSE ATROPHY (MUSCLE WASTING)**
- **INCREASE LOCAL CIRCULATION (MOVE EDEMA)**
- **CARPAL TUNNEL SYNDROME**
- **RANGE OF MOTION PROBLEMS**
- **POST-SPINAL CORD INJURIES**
- **WOUND HEALING**
- **MULTIPLE SCLEROSIS (MS)**
- **PREVENTION OF DVT (DEEP VEIN THROMBOSIS)**
- **TBI (TRAUMATIC BRAIN INJURY)**
- **DEPRESSION**
- **ADDICTIONS**
- **INSOMNIA**
- **ANXIETY**
- **PAIN**
- **MIGRAINE HEADACHES**
- **ADHD**
- **PMS SYMPTOMS**
- **and MORE**



NEUROCARE™

MODEL: NC10004PXP

“THE THERAPEUTIC ELECTRICAL STIMULATOR”

The **NeuroCare NC10004PXP** provides an effective treatment for problems ranging from acute soft tissue injury to restricted circulation. By therapeutically removing the problem, the accompanying symptom of pain is reduced. NeuroCare’s AC Output, high voltage (0-440 volts) low amperage (0-4.4 milliamps) design allows a more therapeutic treatment program and generates improved patient outcomes far beyond any other system.

FDA registered uses: 1) Increase Local Circulation; 2) Muscle re-education; 3) Relaxation of muscle spasms; 4) Maintaining or increasing Range of Motion; 5) Prevention or retardation of Disuse Atrophy; 6) Immediate Post-surgical stimulation of calf muscles to prevent Venous Thrombosis.

The **NeuroCare NC10004PXP**, is a four (4) channel, eight electrode unit expandable to 16 electrodes using lead bifurcation cables. With the High/Low (H/L) feature, the stimulation of small figured individuals, small muscle groups or muscles in spasm can be applied in a more comfortable manner. The system is very user-friendly and applicable for in-clinic or in-home use by the patient or caregiver.

Complete & ready to use

- Main unit
- 4 non-disposable, reusable lead wires
- 2 Packages of 4 self-adhesive, disposable electrodes
- Power Source
- Protocol booklet
- Instruction booklet
- Carrying case

Optional:

- Permanent, carbon electrodes
- Adhesive gel
- Battery Pack



Technical Specifications:

Input Power: Wall mounted transformer
 Input Voltage: 15 to 18.0 VDC
 Input Current: 500 mA
 Pulse Type: Symmetrical, Bi-Phasic Pyramidal
 Pulse Output voltage: 0 to 440 V peak (open circuit)
 Pulse Output Current: 0 to 4.4mA average (1K ohm load)
 Pulse Duration..... 150 uS nominal
 Pulse Train ON Time: 1.5 sec. (Time pulses applied to output)
 Pulse Train OFF Time: .. 1.8 sec. (Time pulse not applied to output)
 Dimensions 8” X 7.5” X 2.5”
 WeightLess than 4 lb.

The portable that is more powerful than a clinical model, yet user friendly for home use. Rental or purchase.

FDA REGISTERED: August 3, 1993

Specific Protocols including, post SCI, Diabetic Foot, Incontinence, Carpal Tunnel and more, as well as studies and testimonials are available upon request. Telephone or e-mail support available for individualized pad placement.

NeuroCare™

NeuroCare is our brand name for the world's only "True Tesla" High Voltage Low Milliamp AC Output Neuromuscular Electric Stimulator. NeuroCare's world leading massive voltage output is delivered in a manner that allows much more powerful muscle contractions to be tolerated by patients resulting in significantly greater results and improved outcomes. The NeuroCare 10004PXP™ and our copyrighted proprietary Treatment Protocols have many applications listed below. Many diagnostic applications are not listed here.

INDICATIONS & USES:

MUSCLE RE-EDUCATION:

Incontinence or Over Active Bladder (OAB)	Post operative muscle rehabilitation
Stroke recovery for ambulation	Sub-clinical diagnosis of neuro-muscular syndromes
Physical Therapy facilitation	Detection of non-participating muscle groups
Decreased athletic rehabilitation time	100% muscle recruitment over treatment period
Frozen shoulder syndrome	Increase in tone and strength of difficult muscle
Off-site Physical Therapy	Muscle Group training (i.e. abdominal, triceps, etc.)
Rehabilitation for knee and hip replacement	Better patient compliance to physical therapy
Pre and Post Surgery Applications	Correcting Strength Imbalances leading to back pain

RELAXATION OF MUSCLE SPASMS:

Industrial sprain/strain complications	Repetitive or overuse injuries
Facilitation to physical therapy	Decrease or elimination of industrial "time loss"
Carpal Tunnel complications	Heel spur/plantar fasciitis
"Whiplash" recovery time decreased	Accelerated athletic re-participation
Diagnosis of specific muscle involvement	Tension headache relief
TMJ syndrome relief	Multiple Sclerosis relief from symptoms
Spinal cord injury complications	Stabilization to manual manipulation
Postural imbalances resulting in Spasms	Spasticity from: Cerebral Palsy, Para & Quadriplegia
Identifying and relaxing Spasms	Correcting poor ergonomics leading to spasm

MAINTAINING OR INCREASING RANGE OF MOTION:

Frozen Shoulder syndrome	Post surgical rehabilitation
Improved and Peak Athletic Performance	Decreased risk of muscle strain
Athletic injury prevention	Detection/Correction of muscle imbalance
Increased patient compliance to Exercise	Accelerated recovery from Athletic injuries
Removal of fluid buildup around arthritic joints	Reduced recovery time from stroke
Prevention of fibrosis from trauma complications	Automated protocols allow for better use of staff time
Increased ambulation, comfort, and balance to	Quicker full return of range of motion for auto accident patients
Removing edema and inflammation	Geriatric patients experience improved quality of life

PREVENTION OR RETARDATION OF DISUSE ATROPHY:

Carpal/Tarsal Tunnel Syndrome injuries	Decreased recovery time for auto accident patients
Diabetic Neuropathy	Increase in athletic performance
Maintenance of muscle tone, post-casting	Maintenance of muscle bulk and tone
Quadriplegics/paraplegics	Post stroke rehabilitation
Neurological injury preventing muscle control	In-house usage for Elder Care or home health
Diagnosis of sub-clinical problem areas	Increased Muscle Girth for Pressure Ulcer Prevention

INCREASE LOCAL CIRCULATION:

Improves wound and injury healing	Healing of Diabetic decubitus ulcers
Diabetic Neuropathy	More effective delivery of pharmaceutical agents (i.e. antibiotics to treat: Osteomyelitis, gangrene, etc.)
Edema/swelling reduction and elimination	Transverse Myelitis
Prevention of blood clot formation	Tendonitis
Decreased healing and rehabilitation time	Prevention of DVT post surgery
"Restless Legs Syndrome" or PAD	