

Tesla Based Technology™ VS Seven Other Electrical Stim Systems

A clinical comparison: My Actual Clinic Experience

By Michael J. Koch DC

Tired of hearing: “My E-stim is the Best ... No mine is ... No, Mine is” ...Well, so was !! So I was very excited when I had the opportunity to do a side-by-side comparison of 7+ of the most popular and/or well touted e-stims on the market. Their individual prices ranged from about \$100 to over \$35,000! Of course one would expect the more expensive the unit, the better it would perform; that’s certainly what I believed! Imagine my surprise when I discovered the exact opposite! Please note that this comparison was not for just a few patients but on several hundred over a 9 month period of time. This was not a blind or peer reviewed study, hence the title of “clinical comparison.” My conclusions are based on outcomes and observation, and there was absolutely no bias. I was not paid or influenced by anything but the search for the truth for the benefit of the patients. I just wanted to know where and how I could get the most healing in the shortest period of time. Needless to say each of the manufacturers of these units will dispute my findings, but absent any other unbiased studies; my opinion will have to suffice for now.

Here is the rundown of units compared (all current models):

Model	Cost	Output Type	Pain mgmt. comparison	Edema Management	Muscle Stimulation Reverse Muscle Atrophy
Chattanooga	\$2500	DC 125 V 90 mA	Fair	Poor	Poor
H-Wave	\$2,500	DC 125V @ 90mA	Fair	Poor	Poor
Intellect US/ Interferential Combo	\$2,500	DC 125V @ 90mA	Fair	Poor	Poor
Tesla Based Technology (TBT)	\$9,495	AC 400-500V @ < 5 mA	Excellent	Excellent	Excellent
NeuroMed	\$25,000	DC 125V @ 90mA	Good	Fair	Fair to poor
ReBuilder	\$1600	DC 125V @ 90mA	Fair	Fair	Fair to Poor
Senexis	\$30,000	DC 125V @ 90mA	Good	Fair	Poor
Synaptic	\$25,000	DC 125V @ 90mA	Good	Fair	Poor
TENS units - generic	\$100 - \$500	DC 125V @ 90mA	Fair	Poor	Poor

Electrical stimulation has been standard fare in DC, PT, and OT, clinics for over half a century; primarily for pain management. Nearly all units are based on the gate theory of pain by Walls et.al. The idea is to “short circuit” pain fibers at their junction or at the pain site by electrically over stimulating them thereby depleting calcium, and temporarily shutting off the pain transmission to the brain. Though it does not resolve the “Cause” it’s been very effective for temporarily blocking pain for the past 60 years. Treatment by electricity goes back hundreds of years when our predecessors discovered that some eels gave off electricity and could be used in a primitive method to reduce pain.

From the early “low and high voltage galvanic” units decades ago, TNS and interferential, to the newest units above, virtually all (except the Tesla) use a direct current (DC) output at varying voltages, amperages, and wave forms; which means very little to anyone but the electrical engineers that create them. Virtually all designers want to create the *perfect combination* of energy output for *optimum pain management*, however they do so by simply tweaking what already exists, and then adding all sorts of fancy switches, digital readouts, suction cups, timers, alarms, and frequency variation programs; all (In my view) to increase the look (perceived value) *and the price!* When opened up, these “magic boxes” *all have* very small *relatively similar circuit boards*. Compared to a TV or a computer there is actually very little there electronically. In fact most practitioners fall into the rut of using only one or two of the many settings available and leave the rest to oblivion; never actually utilizing many of the machines capabilities. Asked what all the other different settings do, few if any can tell you. An analogy might be all the settings on washers and dryers no one uses (especially men), or the choice of performance or eco settings on many new cars. If they do anything at all, only the engineers can tell.

In the 60’s the Russians developed a type of electrical current that could be used to enhance muscle strength for Olympic weight lifters. It was in fact more effective than traditional DC Output systems but painful when used at a high enough voltage setting to create muscle contractions; therefore it was of little use in medical clinics. Eventually it fell out of favor among athletes due to the pain of usage. The reason it was so painful was due to the use of DC (direct current – all the electrons moving in only one direction) current instead of AC (alternating current – electrons moving back and forth alternating direction). It’s ratio of amperage to voltage, while better than other DC output systems was still too high for comfort.

Rehaba has assembled a team of the world’s top Tesla Technology Engineers to optimize the use of Nikola Tesla’s patented technology in the TeslaMax® line of TBT electrical muscle stimulation devices to produce the deepest possible contractions at the greatest possible comfort for patients thus dramatically increasing deep muscle activity to better move out edema and significantly increase blood circulation in the treated area. The results speak for themselves.

It is important to note that the TeslaMax® AC output technology operates at nearly 2,300% lower maximum average amperage output (max 5 mAs) compared to traditional DC output systems (max 90 mAs) so that even at maximum output it cannot burn the patient or cause blisters unlike most of the other units tested. This is particularly important for peripheral neuropathy patients who can’t feel much of anything in their feet. Increasing intensity to the point of perception in severe patients most often results in electrode burns. This problem is eliminated by the Tesla.

My Story:

About 5 years ago I was involved in a practice that specialized in Diabetic and Circular Neuropathy pain treatment, one of the first of its kind in the mid-west. Though we had not yet tried any electrical muscle stimulator that utilized Tesla Based Technology™ (TBT), we were using all of the other above listed treatment modalities with usually some improvement in most patients though we continued to strive for better results. A colleague told me about a specific type of muscle stimulator that used technology invented by Nikola Tesla which he claimed gave much deeper contractions at greater comfort than any other electrical stim system and he suggested that I would find out it would do a better job for our patients. I was highly skeptical, after all we were using units 5 times the size and price, with lots of bells and whistles. It was hard to believe that a smaller-simpler system could be more effective.

Shortly after beginning the use of the Tesla Based Technology™ in our clinic, 80-90% of our patients began asking to receive their in-office neuropathy pain treatments exclusively with the Tesla. As much as we'd try to accommodate them we only had the one unit! We soon discovered almost all preferred the TBT due to its comfort and effectiveness. No one seemed to care the other units cost 5-6 times as much! They just wanted Relief ... NOW! As a side note those that were not getting the Tesla treatments complained bitterly that we were short-changing them, and were not happy! These patients could tell that they were getting much deeper contractions with the Tesla and yet they reported it was also somehow more comfortable with less "Bite" to the electricity run through their muscles.

At the beginning we only used the Tesla for distal peripheral neuropathy, but soon began experimenting with it on all our patients: back pain, spasms, scoliosis, diabetics, wound care, and even lymphedema. The results were nothing short of amazing ... 90% responded much better with Tesla. It seemed that the deeper contractions which could be handled by the patients without discomfort really did get better results.

The question in the clinic quickly became, "Why did we spend over \$100,000 on these other machines when we could have purchased 5 or 6 of the Tesla Max for the cost of just one of the more expensive, less effective units? By the time I left the clinic we had mostly phased out the use of the other systems in favor of the Tesla's superior results.

Shortly after we started using the Tesla Based Technology™ stimulator I attended a seminar on pain management and new technology where one of the featured speakers was Greg Westfall. Greg is the CEO of Rehaba, manufacturer and distributor of certain medical devices and services including TeslaMax® electrical stimulation systems based on Nikola Tesla's remarkable electrical patents and breakthroughs designed to overcome the resistance of distance issues that had perplexed even Thomas Edison. When Greg mentioned the superior results/outcomes only possible via the deeper contractions and greater comfort of Tesla Based Technology™, the other doctors in the room were (as was I at first) skeptical; I could see the disbelief in their eyes and body language. Unsolicited, I raised my hand and recounted my actual clinical experience with the Tesla technology and it's amazing ability to better move out edema and increase circulation to better reduce pain, numbness, tingling, and correct muscle strength imbalances etc. and the crowd was quickly swayed. I did not realize at the time that my effectiveness in sharing my enthusiasm about this technology would eventually result in Greg offering me a compensated role as Director of Clinical Support for Rehaba to help clinics all over the nation learn to better use this technology.

Now Rehaba has developed "Take Home" Programs that allow patients to treat themselves in the privacy and convenience of their own homes thus increasing their actual treatment time by 10 times as compared to in-office only treatments for even better clinical results.

A biological side note: when blood flow into an area is increased, so must the outflow increase. That is, as arterial blood flow increases, so does the venous return. An often forgotten fact is that the flow of Lymphatic fluid (the waste elimination system) is also increased equivalent to the venous flow. The lymphatic system is that which pumps out the inflammation, swelling, edema and waste from an area of damage or illness. The greater the lymphatic flow, the faster a patient heals from whatever ails them, and the only thing that moves lymph is muscle contractions.

I won't belabor this document by noting the hundreds of stunningly successful results obtained with this technology I personally witnessed obtained for difficult patients who had not responded to anything else, but suffice it to say that for moving out edema, improved circulation, removing the cause of pain, nerve damage, stroke, CP, MS, Parkinson's, atrophy, and neuro-muscular dysfunction, in my 40 years of clinical experience I have NEVER seen the kind of outcomes like the ones we achieved with this technology!

I certify that I have made this unsolicited report without promise of reward for the edification of my profession.

Michael J. Koch, DC 

Full Disclosure: Many months after sharing his basic unsolicited clinical analysis above, Michael J. Koch, DC became Rehaba's Director of Clinical Support and is compensated for his services by Rehaba. The above basic report information was provided free of charge unsolicited with no promise of reward by Dr. Koch to Mr. Westfall long before Dr. Koch entered into a financial relationship with Rehaba. Rehaba did not solicit this report and was not part of the above clinical analysis of the various systems discussed and is not responsible for the information provided herein.

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