

Low Back Syndrome/Chronic Low Back Pain*

Five to ten million Americans seek treatment for low back pain each year. While some treatments may offer relief, as many as 40% of these patients have 2 or more recurrent episodes of low back pain annually. Evidence now suggests that the key component to a rapid and complete recovery is mobility.

Exercises that encourage the involved joint(s) to move through the largest range of motion possible, combined with targeted strengthening of the erector spinae and abdominals, offer a true evidence based approach. Motor level electrical stimulation (NMES) is a powerful adjunctive tool that can help clinicians and patients meet these clinical goals.

Electrical stimulation of the erector spinae and abdominal group to promote muscle strength and spinal mobility will have more impact on these muscles than exercise alone. By combining these targeted exercises with the clinical advantages of increased local circulation, patients receive positive outcomes from an evidence based approach to resolving chronic low back pain.

Note: If the abdominal muscles are not weak, a single channel of stimulation over the erector spinae will suffice.

Treatment Set-up:

Low Back Syndrome/Chronic Low Back Pain	
Waveform	Symmetric Biphasic (Preferred)
Mode	Interrupted Pulses
On Time	5-7 Seconds
Off Time	15-21 Seconds (3:1 ratio)
Ramp up Time	2-3 Seconds
Ramp Down Time	2-3 Seconds
Phase Duration	20-300 Microseconds (adjustable)
Pulse Rate	30-50-80 PPS
Polarity	N/A
Intensity	Motor Stimulation (vigorous)
Treatment Time	10-15 Repetitions to 30 Minutes

300PV Set-up:

- 1) Push Setup; NMES is selected
- 2) Push Next (>); PPR is selected
- 3) Adjust (↑) to PPR 4
- 4) Push Next (>); Symmetrical Waveform is selected
- 5) Push Next (>); Synchronous Cycling is selected
- 6) Push Next (>); Off Time is set at 15 seconds
- 7) Push Next (>); set timer at 5 minutes. Increase by 5 minutes each session until a 30 minute session is achieved.

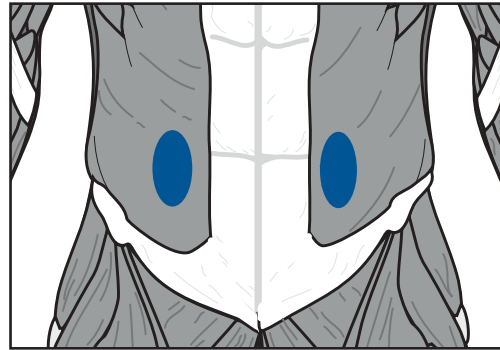


Electrode Placement:

Electrodes are placed over the erector spinae (channel 1) – if also weak, place a second set of electrodes over the abdominals. Use large electrodes to enhance patient comfort.



Back – Channel 1



Abdominals – Channel 2

Treatment Plan:

Combine with exercise program designed to increase mobility and strengthen abdominals and back. Stimulation program should begin with a single treatment per day and advance to twice daily, 30 minute treatments.

Please refer to the device manual for more information regarding appropriate patient selection, indications, contraindications, precautions and warnings.

** Adapted from the presentation, “Evidence-Based Practice of Electrical and Ultrasound Technologies in Neurological and Orthopedic Rehabilitation.” Presented at the APTA National Conference in Washington D.C., June 2003. Gad Alon, PhD, PT, Associate Professor, University of Maryland, School of Medicine, Department of Physical Therapy & Rehabilitation Science, Baltimore, Maryland USA.*

References:

Moore, S.R., Shurman, J. Combined neuromuscular electrical stimulation and transcutaneous electrical nerve stimulation for treatment of chronic back pain: a double-blind, repeated measures comparison. *Arch Phys Med Rehabilitation*, 1997; 78: 55-60.

Delitto, A., Rose, S. Electrical Stimulation Versus Voluntary Exercise in Strengthening Thigh Musculature after Anterior Cruciate Ligament Surgery. *Physical Therapy*, 1988; 68: 660-663.



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