

# BIOFEEDBACK AND ELECTROMEDICINE

## Reduce the Cycle of Pain-Spasm-Pain in Low-Back Patients

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*This study investigated the relative efficacy of three treatment conditions/modalities, namely EMG biofeedback, microcurrent stimulation and the combined effect of the two, implemented for the purpose of alleviating and/or inhibiting chronic pain and associated muscle spasms, the two major components found within the "Vicious Cycle". Measures used to assess treatment outcome included Subjective Units of Disturbance (SUDS), trunk mobility evaluation, daily*

*pain record cards, microvoltage readings and pre- and post-treatment MMPI. Objective and subjective assessment and subsequent relative statistical analysis of findings demonstrated rehabilitative benefits in all treatment groups. The Biofeedback/Electrical Stimulation groups achieved, overall, greater therapeutic benefits than either modality used as a sole source of rehabilitation for the patient in the midst of the vicious cycle of pain and spasm.*

**T**he "vicious cycle of pain-spasm-pain" is a commonly occurring syndrome that is functionally inhibitive and relentlessly painful for patients with low-back involvement. A number of opinions concerning its etiology and treatment regime have been offered, some of which contradict and offset each other. The main purpose and most important aspect of this study is to establish and implement a treatment regime directed at countering this cycle's two main components—muscle spasm and associated pain.

Within the United States, low-back pain has been found to be second in frequency only to the common cold as a cause of disability in patients younger than 55. American industry loses 93 million work days per year because of low-back impairment. Further losses include medical consultations and expenses involved in disability payments.

The vast majority of low-back-pain patients have low-back strain/sprain. This may initially be considered a postural condition since pain from injury to ligaments and muscles precipitates reflex spasm within the muscles of the low-back region,

which, in turn, causes further pain as the muscles themselves fatigue and become sore from constant muscle contraction. Patients with this type of postural backache generally complain of diffuse, aching, non-radiating pain and back stiffness typically representative of muscle pain involvement. Within this situation, physical examination is likely to reveal little other than muscle spasm and laboratory workup is generally found to be negative.

These patients receive a variety of treatments inclusive of physical therapy modalities, psychological and behavior modification techniques, surgical procedures, pharmacology, relaxation exercises and massage, heat, cold and biofeedback training. The modalities used and treatment regimens applied are usually determined by the physician and/or health-care professional. Unfortunately, the chronic low-back patient has a tendency to remain particularly resistant to successful treatment. Reasons for treatment failure may be related to a poor understanding of the physical and/or psychological components underlying the process of chronic pain, in addition to the methods of treatment rendered.