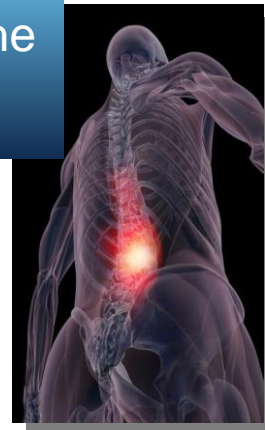


Bio and Neurofeedback Protocols for the Treatment of Chronic Pain



Chronic Pain

Every day is more frequent to hear the expression: “I suffer from a chronic pain syndrome” or maybe “I’m a chronic pain sufferer” or “I’ve been suffering this pain for long time”. But ¿What is chronic pain? ¿Which are the differences between chronic and acute pain? In fact: ¿What is pain?

Neuroscientists and physicians agree that pain is a subjective experience in perception, a natural neurophysiological response to injury or illness and a basic process of alarm that tell us something is going wrong with our health.

Acute pain has a sudden onset and resolution –within hours, days or weeks- it is attributable to an event: injury or illness. Responds to appropriate treatment and, in some cases, has episodes associated with some conditions: like migraine or dysmenorrhea.

But *chronic pain* is a very different health issue. First of all, it is a maladaptive response; it's persistent



commonly defined within 3-6 months of duration. But what is most important: is *difficult to treat –improvement possible and cure often elusive-* and interferes with activities of daily life –*work, school, social events and chores-*. Several common sources of chronic pain have been identified: migraine, and other serious headaches –*there have been described 150 different headaches types since 1980-*, arthritis and other joint pain,

fibromyalgia, irritable bowel syndrome, chronic interstitial cystitis, trauma and post-surgical pain, low back pain, cancer, stroke, diabetes just to mention some of the most common.

And ¿what is pain by the numbers? ¿What is the epidemiology of pain?

According to the Institute of Medicine Report of 2011, 80% of patients experience postoperative pain. From that number 10-50% develops chronic pain. 5% of American women aged between 28-65, experience headaches 15 or more days per month and 62% of nursing home residents report pain.



Approximately **6 million** women have fibromyalgia, more than that number have neuropathic pain and 26.4% of Americans, report low back pain lasting at least a day during a 3 months period of time.

The cost of pain is awesome: 116 million U.S. adults have common chronic pain conditions. Because of that number a conservative estimate of the annual cost of chronic pain to federal and state governments in medical expenditures for pain was \$99 billion. These estimates exclude: individuals in institutional settings –*nursing home residents or correction inmates*–, military personnel, children under the age of 18 and personal caregivers. It's also excluded the loss of productivity of workers <24 and >65 years and in all the cases: *the emotional cost of pain*.

The problem of chronic pain is: under-diagnosed and under-treated.



Several factors have been described associated to the vulnerability to pain: age group, sex and gender, income an education, military veterans, surgical, cancer and patients at the end of life. For all these reasons it has to be concluded that chronic pain is costly and prevalent. Unfortunately chronic pain is underreported, under-diagnosed and under-treated in nearly all health care settings. Something chronic pain syndromes have in common is how poor the quality of life is to the people suffering

from it and the way the physical, mental health and personal economy are permanently compromised. Looking at the numbers, epidemiology prevalence and nature of chronic pain it is to be considered that chronic pain is a disease in itself and requires a comprehensive treatment approach.

The contributions of basic and applied research in Neurosciences for the treatment chronic pain have been substantially improved and

refined in recent years. In applied Neurosciences, Biofeedback and Neurofeedback have been used successfully for the treatment of different chronic pain syndromes. Applied research has demonstrated how, if chronic pain is treated by diminishing its psychophysiological components, most of them in the self-regulation spectrum, the physical, cognitive and emotional integration is reduced, as well as the physiological and physical response to the pain itself. Studying the electrophysiological components of the acute and chronic pain response, it has been described that the central and peripheral elements that can be present independently or in a constellation, also known as a pain's physiological profile and that can be permanently changed with therapy. In applied Neurosciences, therapies have been created for both types of components to be treated both: simultaneously or separately.



The advance in the field is incredible, professionals interested in the theme not only could start a specialty by acquiring training in Biofeedback or Neurofeedback for the management of chronic pain syndromes in general, but become specialized by defining a specific training in one or both specialties and a specific chronic pain syndrome.



With these ideas in mind, we created a seminar considering the contributions in both fields, the basic and advanced elements of each one and the protocols already proved and replicated for the most common chronic pain syndromes.

In the seminar, participants will be trained to select the proper patients/clients to be treated with the Biofeedback and Neurofeedback protocols depending on a specific chronic pain syndrome. Participants will develop the proper skills for the operation of the Bio and Neurofeedback systems for the treatment of the chronic pain syndromes, to conduct the intervention and the proper treatment and follow up protocols.



Themes like: neurophysiology and psychophysiology of chronic pain, the QEEG and psychophysiological profiles of chronic pain patients, and the neurophysiological markers in acute and chronic pain will be reviewed.

We will emphasize themes like: EEG during sleep, consciousness and endogenous evoked potentials in chronic pain syndromes.

Other themes considered in this seminar are: the psychophysiology of pain, the ANS response in acute and chronic pain, the limbic system response during chronic pain and the neurophysiology of emotions in pain in general and chronic pain in particular.

Few Biofeedback and Neurofeedback seminars consider the Biopsychosocial model of pain, so we will be also talking about the physiological learning and social factors in chronic pain and its relation with the electrophysiology of acute and chronic pain. Normal and chronic pain electro physiological profiles are also considered.

Due to the lack of information in common Neurofeedback seminars about EEG patterns of pain; the seminar is designed to review the psychophysiological profiles and chronic pain treatment protocols in conjunction with both traditional and QEEG Neurofeedback procedures.

Normal, acute and chronic pain psychophysiological and neurophysiological readings are revisited in its relation to pain treatment protocols, (instrumentation and practice and report creation). Finally we review in detail Neurophysiological markers of acute and chronic pain, its use in assessment, treatment and relapse prevention.

This seminar is an excellent opportunity to learn from the expert and his experience about the noninvasive treatments for a health issue that has to be considered and managed as a disease in itself and requires a comprehensive treatment approach that has to be conducted by interdisciplinary health care groups.

Join the seminar and live the experience to be trained with the most reliable systems, outstanding interventions protocols and become an expert in management of one of the most costly and prevalent health issues in America today.

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Additional information on the seminar:

<http://biofeedbackinternational.com/palacios.htm>