FROM THE EDITOR

Advances in Surface Electromyography for Rehabilitation

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The cover of this issue shows biofeedback practitioner Dr. Jeffrey Bolek and physical therapist Lauren Blauser assisting an eighteen month old boy, Drew, in his muscle rehabilitation work, guided by surface electromyographic biofeedback. This photo introduces the theme of a special section in this issue: Advances in Surface Electromyography for Rehabilitation.

Professional Issues

Sebastian Striefel addresses a serious ethical and legal challenge facing biofeedback practitioners as well as health care professionals in general: the duty to warn and protect individuals against potential violence, and the difficulty in assessing dangerousness to self and others.

Biofeedback Certification Institute of America (BCIA) certification was originally developed to establish and promote standards for the education and training for all providers of biofeedback services. The focus was on the advancement of the profession and the protection of the consumer. Randy Neblett, Fred Shaffer, and Judy Crawford provide an article discussing the immediate practical value of BCIA certification for individual practitioners, based on a recent survey of BCIA certificants.

Special Section: Advances in Surface Electromyography for Rehabilitation

Jeffrey Bolek provides a discussion of basic learning principles useful in improving the effectiveness of muscle retraining using surface EMG biofeedback. He begins with the practical wisdom of an experienced grandmother in the behavior management of her grandchildren, and then advances to a discussion of basic behavioral learning principles, and concepts such as positive reinforcement, negative reinforcement, positive punishment, and negative punishment. Although his examples come from the field of neuromuscular rehabilitation, his lessons apply to any biofeedback training process.

Michael Geisser, Kevin Alschuler, Stuart Donaldson, and Donna G. Smith describe a new rehabilitation device called the MyoRack™, designed to guide and assist a muscle stretching and retraining protocol for individuals with chronic low back pain. This research initiated by Stuart Donaldson focuses on the absence of a flexion-relaxation response (FRR) in many patients with chronic back pain. The article introduces a protocol to assess the presence or absence of this FRR, and the guidelines for restoring this response where appropriate. Their work extends the value of surface electromyography for chronic low back pain populations.

Feature Articles: Applications of Respiration Training and Heart Rate Variability Biofeedback for Student Athletes

Jan van Dixhoorn of the Netherlands began a three part series on his “whole body breathing approach” in the Summer 2008 Special Issue on respiration, and continues that series here. He places a great emphasis on each individual becoming acutely aware of his or her own psychophysiological responding, in order to improve internal self-regulation and tension regulation. He includes a case history of a 12 year old student athlete, with disturbed sleep, headaches, fatigue, and breathing difficulties during running. He presents a model which attempts a comprehensive formulation including both internal and external self-regulation.

Leah Lagos and her coauthors, Evgeny Vaschillo, Bronya Vaschillo, Paul Lehrer, Marsha Bates, and Robert Pandina, also present a case history of a student athlete. Their work is focused on using heart rate variability (HRV) training to reduce performance anxiety and improve competitive performance in a 14 year old golfer. Lagos and her colleagues narrate the extensive applications of HRV biofeedback in optimal performance work with both elite athletes and student athletes, both in Russia and the United States. (Vietta Wilson, Erik Peper, and Donald Moss discussed the use of HRV training and other biofeedback approaches by the World Cup winning Milan, Italy soccer team, in the Fall 2006 issue of Biofeedback).

Technological Corner

Michael Wong of Hong Kong has contributed a brief technical report addressing the problem that biofeedback
practitioners face so frequently. With the rapid obsolescence of computer operating systems, many biofeedback systems with continued clinical value will no longer function on newer computers. He describes a software accommodation to extend the use of such devices.

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Proposals and Abstracts
Authors are invited to submit manuscripts on any topic in applied psychophysiology and biofeedback. Articles are welcome for special issues on Advances in Neurofeedback and Quantitative EEG, scheduled for Winter 2008; Mind-Body Approaches to Posttraumatic Stress Disorder (PTSD), for Spring 2009; and Biofeedback and Neurofeedback for Traumatic Brain Injury (TBI), for summer 2009. Given the pressing need to provide both skillful and compassionate care for the returning veterans of the Iraq and Afghanistan conflicts, both the topics of PTSD and TBI carry special urgency. Many leaders in the biofeedback profession have lived through the Vietnam era, and one of the many tragedies of that war was the number of veterans who became permanently disabled by treatable conditions such as PTSD and head injury. The current conflicts in Iraq and Afghanistan include the “horrors of war” which have emotionally traumatized combatants in every modern war, but the use of the so-called improvised explosive devices has greatly increased the number of head injuries with lingering neuropsychological impairments. We will present a number of psychophysiological approaches to these critical problems in the first two special issues of 2009.

Proposals and Abstracts are also invited for additional topics for future special issues of Biofeedback.

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