This educational CD provides a multimedia “electronic textbook” for students and biofeedback practitioners. It provides a series of 19 user-friendly tutorials, each with clear learning objectives, narrative text with photographs and graphic illustrations, and moving displays of biofeedback signals. The Biofeedback Tutor also provides multiple-choice testing for each tutorial. Through an active Internet connection, the students submit their answers and receive feedback. The CD provides an e-mail service for students’ questions about the tutorials or the multiple choice questions.

The Biofeedback Tutor opens up in Windows Explorer, with navigation through a topical menu. Each individual unit is searchable by using the Explorer “Find” function, so the Biofeedback Tutor can also serve as a reference for questions that arise in any of the topical areas. For example, inserting the word bandpass for a search within the EMG hardware unit quickly guided me to multiple discussions of EMG bandpass.

The educational material is divided into five preliminary units on general topics that cover the history of biofeedback, concepts, psychophysiology, electricity, and relaxation training. The remainder of the CD provides three broad sections on anatomy, biofeedback hardware, and clinical applications. The anatomy section covers skeletal muscles, the cardiovascular system, electrodermal (EDA) anatomy, respiration, and the EEG. The hardware section covers the EMG, cardiovascular measures, EDA instrumentation, and the EEG. The clinical section covers musculoskeletal, neuromuscular, cardiovascular, autonomic, and EEG applications. Although this Biofeedback Tutor does cover brain and nervous system anatomy, EEG instrumentation, and EEG clinical applications, a more detailed parallel product, the Neurofeedback Tutor, is also under development.

Each unit in the Biofeedback Tutor is well written with simple, readable explanations of concepts; citation of relevant research; and a large number of illustrations and schematics to assist learning. The research citations are constantly updated, with the current edition citing a number of 2003 and 2004 publications including, for example, the most recent guidelines on hypertension. I will discuss one unit in more detail to convey the design and the usefulness of this product. The unit on EDA biofeedback instrumentation (the Biofeedback Tutor uses the term “hardware”) opens with 15 learning objectives, each of which is addressed in the remainder of the unit. The tutorial defines skin conductance and resistance and discusses the differences between the two. A photo shows EDA electrodes, common placements, and a moving display of an EDA signal displayed on a line graph using the Thought Technology Infinity system. Text and illustrations also cover event-related skin conductance responses, skin resistance and skin potential measures, signal properties, instrumentation, signal processing, and measurement precautions. The tutorial guides the student in using a tracking test to assess whether the current signal display matches the student’s subjective responding, and the use of a “dummy subject” with a fixed resistance checks the accuracy of the electrodemograph. The tutorial also provides information about medications that will increase or decrease EDA activity. The unit closes with a list of seven useful references for further reading about EDA biofeedback.

Instructors will find the information and graphics in the Biofeedback Tutor helpful in preparing their own lectures. Reproduction of the LifeArt images is prohibited, as this violates the publisher’s copyright. Web site reproduction of all images and video segments featured in this product is also forbidden. However, Biosource Software permits noncommercial educational use of other images and video segments as long as Biofeedback Tutor is credited as the source.

Critical Perspectives

As mentioned, the material about neurofeedback in the Biofeedback Tutor is relatively limited and introductory. However, a Neurofeedback Tutor with a more detailed curriculum is currently under development.
The Biofeedback Tutor is a useful teaching device with few limitations. The author of the Biofeedback Tutor is highly responsive to questions and suggestions. On my first reading, I questioned some of the discussion on heart rate variability, and Dr. Shaffer immediately modified some of the relevant text to make the discussion more helpful and clear for students.

Pricing and Use
This educational CD is $75.00 US. Students will find this a valuable and unique tool for learning biofeedback basics, and those pursuing Biofeedback Certification Institute of America (BCIA) certification will find this an excellent adjunct in preparing for the exam. Anyone regularly teaching courses or workshops on biofeedback will find useful information and illustrations to augment lectures.

The Developer
Fred Shaffer, PhD, has been a professor of psychology at Truman State University since 1975. He completed an MS in clinical psychology (1973) and a PhD in social-personality psychology from Oklahoma State University (1975). His interest area is applied psychophysiology. He teaches courses in applied psychophysiology, physiological psychology, and psychopharmacology, and regularly works as a consultant for publishers in these areas. He is certified in the specialty area of biofeedback by the BCIA. He serves on the board of the Biofeedback Certification Institute of America (BCIA) and helps teach the AAPB Foundations of Biofeedback workshop. He is the coauthor of the Instructor’s Manual with Test Bank for Myers and Hansen’s Experimental Psychology (5th ed.) and the author of the Multimedia Manager for Wilson’s Biological Foundations of Human Behavior (2003).

Availability
Biofeedback Tutor is available from Bio Medical Instruments, STENS, and Mind-Fitness. It can also be purchased directly from AAPB online at www.aapb.org or by sending an email to aapb@resourcenter.com. If one purchases the CD through AAPB, a portion of the purchase price will go to AAPB for general operations.

Physiology and Methodology of Biofeedback
Developed by Ernesto Sholomo Korenman, PhD
Reviewed by Donald Moss, PhD

Today we encounter a variety of new media formats for educational material. The Physiology and Methodology of Biofeedback CD reviewed here provides a comprehensive introduction to the anatomy and physiology relevant for peripheral biofeedback interventions, biofeedback instrumentation, and biofeedback training procedures.

The educational material is divided into six units and a total of 14 lectures. The CD is composed of the following units: (a) Biofeedback Instrumentation, (b) Electromyograph (EMG) Biofeedback, (c) Electrodermal (EDA) Biofeedback, (d) Cardiovascular Biofeedback, (e) Breathing Biofeedback, and (f) Peripheral Temperature.

Each unit consists of Power Point slides and an accompanying PDF file containing the slides in a handout format. For example, Unit I has four lectures consisting of 93 slides. The lectures in Unit I cover general instrumentation, with an overview of the “patient-instrument-therapist triangle”; basic concepts of electricity; biofeedback instrumentation; and electrical safety. Unit IV covers cardiovascular biofeedback in two lectures with 59 slides. This unit covers heart neurophysiology, heart and blood circulation, peripheral circulation, the electrocardiogram signal, blood pressure and its control, heart rate variability, respiratory sinus arrhythmia, and heart rate variability biofeedback.

The graphics of this educational CD are truly phenomenal and are some of the best graphics on physiological function that I have encountered. For example, the section on cardiovascular physiology begins with a beautiful graphic of the heart, and a series of slide views show the atria and ventricles and then label the neural centers critical in cardiovascular function. However, the slides, although clear and well labeled, are quite complex for a newcomer to the field. Some contain extensive explanatory text, but others remain quite sketchy. The slides on heart rate variability, RSA, and heart rate variability biofeedback are beautifully constructed but would be nearly impossible to follow unless one already has at least an intermediate level of knowledge of cardiovascular physiology. For some reason the author elected to use the Heart Math software screens for his illustrations of HRV...
biofeedback, yet does not elaborate on the significance of the Heart Math entrainment ratios or the “heart lock in,” which are not mainstream physiological concepts.

There are some quirks in this CD, which should be fixed for the reader’s benefit. The English text is not always grammatically correct, and the punctuation is inconsistent. For example, parentheses are left open. A good text editor is called for. The material is highly organized into units and lectures, yet there is no designation where one lecture ends and another begins. The Power Points themselves, probably because they originate in Israel, are reversed in layout from what North American users expect. The current slide appears on the left and the thumbnail slides on the right. When one chooses the Slide Sorter view the slides run from right to left, like a Hebrew text. Finally, and most critically, this beautiful set of lecture slides would be more instructive if text or a voice-over provided the lecture itself. In many places, the lecture slides require explanation or narration in order to convey their sense to a novice.

**Pricing and Use**

This educational CD is $100.00 US in a protected format, which allows one to view and project the slides. However, if one wishes to purchase the right to modify the slides or use the graphics in one’s own lectures and presentations, a special pass code is required, which is priced at $170.00 US. Anyone regularly lecturing on the anatomy and physiology relevant for biofeedback practice will covet these graphics.

This educational CD would be most useful as lecture slides for an experienced lecturer, because the lecturer could fill in the discussion missing in the slides themselves.

**The Developer**

Ernesto Sholomo Korenman was formally trained in biology, neurophysiology, and biophysics. He holds a PhD from the University of London, UK, and worked as a researcher for 17 years in various areas of psychophysiology, biophysics, and medical electronics in the Department of Medical Electronics and Physics of Saint Bartholomew’s Hospital in London. In addition to his formal scientific training, Korenman pursued in parallel his interest in complementary medicine and has been trained in various healing arts.

Since the mid-1980s, Korenman has been involved in various projects in the field of applied psychophysiology as an inventor, researcher, and developer. He is a founding member and for 7 years the research and development director of Ultramind International (today Ultrasys PLC) in the UK and Israel, a company pioneering the development of computerized biofeedback and psycho-physiological applications for the general public in Europe.

From the mid-1990s he has lived in Israel and shifted his energies toward clinical biofeedback and teaching biofeedback. Korenman is a certified biofeedback practitioner. He is at present involved in private clinical biofeedback and neurofeedback practice and teaches courses licensed by the Israeli Association of Psychophysiology and Biofeedback. He also collaborates as a consultant to a company involved in the design of devices for rehabilitation after injury and stroke based on robotics methodology enhanced by psycho-physiological features. Finally, Korenman also pursues private research and development interests implementing the principles formulated in a series of new patent applications in the area of neurotechnology and ultradian biorhythmic synchronicity.

**Availability**

To buy this educational CD, **Physiology and Methodology of Biofeedback**, contact Mr. Dan Tune via email at tuneedna@isdn.net.il or by phone at 972-9-958-3372.