Dr. Desire's Book on CPTcode advice for Biofeedback Therapists

You Can get Paid if you Persevere

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CPT - Current Procedural Terminology

CPT® is registered trademark of the American Medical Association

CPT (Current Procedural Terminology) codes are numbers assigned to every task and service a medical practitioner may provide to a patient including medical, surgical and diagnostic services. They are then used by insurers to determine the amount of reimbursement that a practitioner will receive by an insurer. Since everyone uses the same codes to mean the same thing, they ensure uniformity.

It should be noted, however, that uniformity in understanding what the service is, and the amount different practitioners get reimbursed will not necessarily be the same. For example, Doctor A may perform a physical check up (99396) and be reimbursed $100 by your insurance company. If you went to Doctor B, his reimbursement by your insurance company for that same checkup, Code 99396, might only be $90. (This is not true for Medicare patients. Medicare uses HCPCS codes instead.)

(There is another set of codes used by physicians and facilities, too. These are called ICD codes, like ICD-9 or ICD-10 codes. They do not relate directly to billing, so are described separately.)

CPT codes are developed, maintained and copyrighted by the AMA (American Medical Association.) As the practice of health care changes, new codes are developed for new services, current codes may be revised, and old, unused codes are discarded. Thousands of codes are in use, and they are updated annually. Development and maintenance of these codes is overseen by editorial boards at the AMA, and the publications of all the software, books and manuals needed by those who use them brings an estimated $70 million in income to the AMA each year.

Because these particular codes mean so much income for the AMA, it is difficult to find lists of them that are accessible to the public. In fact, groups that have tried to make them public have been cited for violations and fines by the AMA and have been forced to remove them from the Internet. Many groups license the lists of codes from the AMA, however, and then publish them online or in books. They are allowed to charge for access since they are also paying that licensing fee.

Examples of CPT Codes:

- 99214 may be used for a physical
- 90901 biofeedback training general
- 90911 EMG biofeedback
- 90875-90876 Individual psycho-physiological therapy incorporating biofeedback training by any modality (face-to-face with the patient) to measure unconscious reactions to words or stimuli. Often with psychotherapy (eg’ insight oriented’, behavior modifying, reactivity monitoring or supportive psychotherapy)

90901-90911:: Biofeedback Services and Procedures

Psycho-Physiological therapy incorporating biofeedback where a discussion or interview and conversation take place with therapist (doing therapy) and client with the patient hooked to a biofeedback device. As the therapist guides the discussion the therapist can see reactions of the patient to words or stimuli. The therapist seeks insight, education, behavior modification, muscle awareness, and many more productive results, when the therapist has more insight into the body electric. Words lie but the body electric does not. The basic lie detector is just a simple biofeedback device.
If you use Medicare, you'll see CPT codes, but used a bit differently. Medicare uses HCPCS codes (Healthcare Common Procedure Coding System.)

**Matching CPT Codes to the Services They Represent**

Until recently it was difficult to find out what certain CPT codes meant without contacting your insurance company or doctor's office.

However, now you can use this CPT code lookup on the AMA website.

**More About Medical Codes and Coding**

- How to Match a CPT Code to Its Service
- What are HCPCS Codes?
- What are ICD Codes?

**Suggested Reading**

- Follow the Money - How Money Influences Healthcare
- What are HSAs - Health Savings Accounts?

**More Suggested Reading**

- The Medical Information Bureau - Credit and Health Combined
- How Can Healthcare Fraud Be Stopped?
- Avoiding Medical Identity Theft

**Related Articles**

- HCPCS Codes - What are HCPCS Codes
- CPT Codes - Where to Find CPT Codes and How to Match a CPT Code to Its Serv...
- CPT Codes - Review the CPT Codes on Your Doctor's Appointment Receipt
- Medical Codes - A Patient's Guide to Medical Codes
- Insurance Codes - Understanding Insurance Codes

**What are ICD codes**

ICD-9 is an acronym used in the medical field that stands for International Classification of Diseases, ninth revision. In the United States, the ICD-9 covered the years 1979 to 1998. Currently, ICD-10, which is the tenth revision, is in effect as the most current database of disease classifications. ICD-9 was used in the US until the 10th revision became fully implemented in 1998, though the actual revision was concluded some years earlier.

The ICD is used to provide a standard classification of diseases for the purpose of health records. The World Health Organization (WHO) assigns, publishes, and uses the ICD to classify diseases and to track mortality rates based on death certificates and other vital health records. Medical conditions
and diseases are translated into a single format with the use of ICD codes. The current ICD-10 varies slightly from the previous ICD-9 and includes almost double the number of categories in a total of three volumes.

Current ICD classifications are alphanumeric codes that represent any known disease, condition, or circumstance that has or could cause a person’s death. The classifications are as specific as possible. For example, cancer is a leading cause of death, but the ICD provides a specific classification for each type of cancer, from lung cancer to breast cancer and so forth. Further, there are ICD classifications assigned to deaths not caused by disease, such as suicide, homicide, and accidental death. The September 11 attacks on the United States prompted further classifications for death by terrorism.

Many of the ICD-9 codes remain unchanged in the newest revision, and only where it became necessary to further classify or provide new classifications did the ICD-9 change. Individuals in the healthcare profession who manage health information and records must constantly keep abreast of the changes and modifications applied to the ICD.

The ICD has been in use since its inception in 1900. It is updated annually with minor revisions and every three years with major revisions, and it is republished in a fully revised version every ten years. It has been published by the WHO since 1970. The United States Department of Health and Human Services publishes their own further indexed version of the ICD to include diagnostic and operative procedures, which at present is ICD-9-CM, meaning clinically modified. In addition to statistics and mortality rates, the ICD is used for health records, reimbursement systems, and public data.

Only a licensed diagnostician can diagnose a clinical disease. There are certain simple diseases such as headache, acne, stress etc that can be treated with over the counter help. A doctor can use anything at his disposal to form a diagnosis. He can use the biofeedback results to assist his diagnosis. Reactions to stimuli, muscle tension changes, brain wave changes etc can all be used in his determining a diagnosis. So biofeedback although not diagnostic in itself, can be used by a doctor to support and help him in his diagnosis.

Stress can be treated and identified by an unlicensed biofeedback therapist, but acute stress of an excessive nature is best diagnosed by licensed therapists.
CPT CODES

by Desiré Dubounet
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1. Reduce causes of disease

2. Rebuild organs and tissue destroyed by causes

3. Unblock the blockages of flow

4. Treat symptoms NATURALLY

5. Metabolic and constitutional therapy.
The Body Electric has many global important measures. These include Volts, Amps, Resistance, Hydration, Oxidation, and Proton and Electron pressure. There are oscillatory norms of these values as well. The electrical vital signs. These are all easily measured and easily corrected in a cybernetic biofeedback loop. By interfacing with the body electric thru stimulus, response, correction and re-stimulation, we can try to normalize and stabilize the body electric. If we can reduce the causes of disease with behavioral medicine, provide good nutrition to supply needed homeostasis, repair the damage to organs, and unblock the blockages to energy flow, we have the start of a good truly modern medicine. Selye has proved that by reducing stress and the stressors we can advert the early progression of disease, and dramatically reduce degenerative disease. But this is drugless and threatening to the profits of the drug companies. We need to prefer people over profit. We need to become aware of the science and look through the sensational tabloid press to make an informed choice.

The over emphasis on drugs (SINthetic drugs) and surgery and the under emphasis on lifestyle has created a monster. The regulatory bodies, FDA, let Big Tobacco, Big Sugar, Big Pharma, run rampant while spending time and money on attacking safe, scientific, tested and effective natural medicines. This is a tragedy of modern times and profit corporations out of control.
HEALTH IS EASE OF FLOW

Stressors block Flow, Stress is more than Just personal stress.
Stress Reduction is the key to Medicine.

When the stressor or stressors weaken the defenses of the body, the weakest link of the body (from nature or nurture) is most prone to distress and thus disease.

LACK OF AWARENESS OR LACK OF EDUCATION
STRESS
HEREDITY
MENTAL FACTORS
(Greed, anger, delusion arrogance ETC)
ALLERGY
BAD POSTURE

TOXICITY
TRAUMA INJURY
PATHOGENS (microorganisms, bacteria, fungus, virus, prions, worms, etc.)
PERVERSE ENERGY (heat, cold, wind, dryness, radiation, magnetic, etc.)
DEFICIENCY OR EXCESS OF NUTRIENTS

Nelson Method of Medicine

1. Reduce the Causes of Disease, Change Behavior, get patients to Care, get the nail out of the tire

2. Repair the organs weakened by the Causes. Restore Health. Fix the Tire

3. Unblock the Blockages to energy, nutrition, Oxygen, waste, Parana, acupuncture, nerve FLOW

4. Treat the symptoms with natural means before resorting to Synthetic. Use foods, exercise, herbas, homeopathics any and all natural means before resorting to Synthetics

5. Balance the metabolic typing or Constitutional Imbalances. Treat the patient as an Individual Whole

Selye Pathway of Disease

health then enter stressor (toxin etc)-enters

1. ALARM Stage
symptoms are the alarm, not the enemy, symptoms at first are related to the Stressor, later the dysfunction

if stressor continues then
2. ADAPTATION Stage
symptoms go away as we adapt, the distress + disease penetrates deeper. You can have no symptoms and be very very sick.

Being symptom free is not an indicator of Health

if stressor continues then
3. EXHAUSTION Stage
the stressors burden the weakest organs

if stressor continues then

a. FUNCTIONAL
first the stressors effect the weakest organ function

if stressor continues then
b. ORGANIC
then the weak organs start to swell or shrink

if stressor continues then
4. DEATH
cellular, organ, organ system, organism death

Since the body's weakest link is prone to disease from the stressors, any disease will improve with reduction of the stressors. If there is good nutrition and no excess or deficiency of nutrients, the body's repair system improves. With stress reduction the Para-Sympathetic system becomes free to boost digestion and immunity as well as cellular repair. Some stressors can have more specific target diseases, such as cigarettes target the lungs primarily. But with the lack of systemic oxygen, any other weak link in the body from genetics or from life will be involved, thus stress reduction is a universal therapy for all diseases. Reductionism of diseases via inaccurate and expensive current medical diagnostic means, are archaic, inaccurate, overly complex, non-productive, expensive, unsafe, risky and most often ineffective. Add to this the risk of side effects from SINthetic drugs and we see the poor history of medicine. Nelson and Selye have plotted out a safe, inexpensive and effective new more modern medicine.
CPT Codes Home Use

CPT codes are easy, it’s just paperwork

First you can always try at any time to get paid for a biofeedback session.

You need ICD disease classification which is the diagnosis. Acute Stress is number 308 on ICD 9 and on ICD 10 number F43, F43.1 post traumatic, F43.8 other reactions, F43.9 reactions to stress unspecified. Biofeedback is useful for stress. If you have a doctor’s prescription you can with his recommendations it helps. Be sure the doctor gives an ICD diagnosis and reasons for the biofeedback. But you are free to try anyways. You will next need a super bill to bill for your services, which are classified under the CPT codes. A list is in this volume.

The SCIO has an automatic form for this that should help make it easy. You should appeal to the insurance company to become a provider of services. It helps to have the IMUNE license, but supply any and all documents you can.

If you are rejected you can make 3 tries to recover you funds. Copies of possible appeal letters are in this text. Be sure to modify them for the use and do not just copy and send. THINK.
Home use rental

Here is information on Home use rental with a prescription for the patient to use at for therapy.
A new SCIO is 15,000 euro. There are some mechanical upgrades in speed of measure for input, range of delivery of output etc. The Indigo is similar to the new SCIO there are subtle differences and each has some superior characteristic over the other, but they are largely equivalent.

Which software you use depends on if you have a license or not. If you have a license you should use the SCIO software which will run on your Indigo. If you are not licensed then use the Indigo software. You can get an official

Neuro-Electro-Physiology, Bioresonance and Biofeedback SCIO therapist

from the University of Timisoura in Romania thru IMUNE.

IMUNE is now part of the University of Timisoura in Romania and has the ability to give and credential courses on natural health fully. You can get a SCIO therapist qualification. The new Wellness doctorate is ready to go with almost 100 hours of courses and books for you to learn and become a licensed Wellness and or Biofeedback Therapist. A flyer is attached. This has full International accreditation. All fears should now be gone. The back biting jealousy over IMUNE should be dissolved.

If you wish to lease a new SCIO from us with only 2,500 Euros down, 12,500 to lease and given a monthly payment of one of the following:

1 years — 1106 Euros/month
2 years — 594 Euros/month
3 years — 425 Euros/month
4 years — 341 Euros/month

The leasing agreement has a small penalty for early payouts.

The new SCIO is 15,000 euro for those who wish to arrange other financing.
REFURBISHED UNITS

We now have refurbished trade in units for a much reduced price. These units will have a new test kit, a new paint job of multi tone blue, a year guarantee, a new harness and of course the new software.

We have many of these in stock but supplies will be limited.

Retail Prices

The QXCI is now the QT device and it will sell for 5,000 euro,

The serial port SCIO will be 10,000 euro,

The usb SCIO will be 12,500 euro.

LEASE PROGRAM

1,500 euro down, monthly prices are variant depending on how long you finance, but I use 2 yr approximate terms as an example. At the end of the term of lease the system is yours.

<table>
<thead>
<tr>
<th>Product</th>
<th>Monthly Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>QT</td>
<td>100 euro</td>
</tr>
<tr>
<td>Serial SCIO</td>
<td>350 euro</td>
</tr>
<tr>
<td>Usb SCIO</td>
<td>400 euro</td>
</tr>
</tbody>
</table>

RENTAL PROGRAM

And we have a simple rental agreement where you only rent with an option to buy later. Here there is a reduced monthly payment but a balloon at the end if you want to purchase. You must insure the device for theft or damage and be responsible for it. There is first and last month down and a one month security fee.

<table>
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<tr>
<td>Usb SCIO</td>
<td>350 euro</td>
</tr>
</tbody>
</table>

We at IMUNE will be teaching courses of how to use the device and how you could make a thousand euro a day helping people. We will supply adverts and flyers to help you build your business.
In 1982 Dr. Nelson wrote the first ever treatise on Quantum Biology and he laid the groundwork for the science of the Quantum Xrroid Interface System.

First developed in 1985 and registered with the FDA in 1989, The Electro-Physiological Feedback Xrroid entered the market place. Day to day improvements have sharpen its operation. There have been over a hundred medical articles and studies published in peer reviewed medical journals on the technology.

Now registered in most of the countries of the world The EPFX Technology is advancing fast. Over 31,000 devices have been sold with tremendous results worldwide. The testimonials file is astounding.

Now the SCIO as it is called today offers you the finest energetic medicine has to offer with the largest medical software in the world available for you.

If you need more information on the SCIO and purchase details please get in touch with us

Maitreya Kft.
tel: +3613036043 | web: www.qxsubspace.com | e-mail: info@qxsubspace.com
The IMUNE education for 12 to 18 months will be 200 euro a month or 2,500 euros in a onetime payment. You will graduate and become an EU registered Bioresonance Therapist and a Doctorate of Wellness if you complete your thesis and other requirements. During your apprenticeship we will teach you to see patients and show you how to make thousands of Euros a month during the educational process. And even more when you graduate. Many therapists make over 3,500 Euro a month or more working part time in a clinical practice, all while helping others.

Our medical team will supervise not only your education but also your practice to protect you as you learn. We need quality people with good minds and determination. Prof Nelson will be your head mentor. After an intensive start program you will be helping people and learning as an apprentice under medical supervision. Your education continues with weekly home study, practicum, and some in person contact hours. You can earn as you learn from home and in monthly courses in person. We will teach you the business of a practice as well as the practical skills. The total course is 750 hr. and usually lasts for 18 months. Some advanced students can be fast tracked and graduate earlier, provided all practicum material, thesis and tests are completed.

If after a time you or we find that you are not capable of learning how to see patients, you apprenticeship can be discontinued and no monies returned.

This is an incredible opportunity for a select few to enter into a new and exciting field of natural bio-resonance medicine.

If you want more data please ask by e-mail

info@qxsubspace.com
contact@imune.net
contact@scioqxci.net
Neurofeedback as a Therapy

MP 2.01.28  Neurofeedback as a Therapy

<table>
<thead>
<tr>
<th>Medical Policy</th>
<th>Subsection</th>
<th>Last Review Status/Date</th>
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</thead>
<tbody>
<tr>
<td>Medicine</td>
<td>Subsection</td>
<td>Reviewed with literature</td>
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Description

Neurofeedback describes techniques of providing feedback about neuronal activity, as measured by electroencephalogram (EEG), in order to teach patients to self-regulate brain activity. Also known as EEG biofeedback, several different techniques have been examined in an attempt to normalize unusual patterns of brain function in patients with central nervous system (CNS) disorders such as attention deficit/hyperactivity disorder and substance abuse disorder.

Neurofeedback may be conceptualized as a type of biofeedback that uses the electroencephalogram (EEG) as a source of feedback data. Neurofeedback differs from traditional forms of biofeedback in that the information fed back to the patient (i.e., EEG tracings) is a direct measure of global neuronal activity or brain state, compared to feedback of the centrally regulated physiological processes such as tension of specific muscle groups or skin temperature. The patient may be trained to either increase or decrease the prevalence, amplitude or frequency of specified EEG waveforms (e.g., alpha, beta, theta waves), depending on the changes in brain function associated with the particular disorder. It has been proposed that training of slow cortical potentials can regulate cortical excitability, and that using the EEG as a measure of CNS functioning can help train patients to modify or control their abnormal brain activity.

Neurofeedback is being explored for the treatment of a variety of disorders including attention deficit/hyperactivity disorder (ADHD), learning disabilities, traumatic brain injury, seizure disorders, substance abuse-related disorders, menopausal hot flashes, panic and anxiety disorders, fibromyalgia, tinnitus, substance abuse, depression, stress management, or sleep disorders. Two training protocols, training of slow cortical potentials (SCPs) and theta/beta training, are typically used in children with ADHD. For training of SCPs, surface-negative SCPs and surface-positive SCPs are generated over the sensorimotor cortex. Negative SCPs reflect increased excitation and occur during states of behavioral or cognitive preparation, while positive SCPs are thought to indicate reduction of cortical excitation of the underlying neural networks and appear during behavioral inhibition. In theta/beta training, the goal is to decrease activity in the EEG theta band (4-8 hertz [Hz]) and increase activity in the EEG beta band (13-20 Hz), corresponding to an alert and focused but relaxed state. Alpha-theta neurofeedback is typically used in studies on substance abuse.

Related policies:

2.01.27 Biofeedback as a Treatment of Urinary Incontinence in Adults

2.01.29 Biofeedback as a Treatment of Headache

2.01.30 Biofeedback as a Treatment of Chronic Pain

2.01.53 Biofeedback for Miscellaneous Indications
Biofeedback as a Treatment of Fecal Incontinence

Benefit Application

BlueCard/National Account Issues

Neurofeedback may be administered either by a psychiatrist or psychologist.

Rationale

This policy was originally based on a 1997 TEC Assessment (1), which concluded that there were inadequate data to permit conclusions regarding the health outcome effects of neurofeedback for any indication. Among the 19 studies reviewed in the TEC Assessment, few were randomized controlled trials and those that were did not support the efficacy of neurofeedback in improving health outcomes. In addition, even among the randomized clinical trials, only 2 studies used appropriate control conditions. A literature update for the period between 1998 and October 2004 identified few a total of 5 relevant articles. (2-6) Literature review updates using the MEDLINE database, performed in June 2006, August 2007, and May 2009, indicate increasing interest in neurofeedback for a variety of conditions, although the scientific literature appears to be the most advanced for attention deficit/hyperactivity disorder (ADHD). (7) Relevant randomized or quasi-randomized controlled trials of neurofeedback are described here.

Literature Review

Attention Deficit Hyperactivity Disorder

A 2005 review/meta-analysis used criteria from the Association for Applied Psychophysiology and Biofeedback (AAPB) and the International Society for Neuronal Regulation (ISNR) to assess the clinical efficacy of neurofeedback for ADHD. (8) The authors concluded that neurofeedback for ADHD was ranked at level 3 or ‘probably efficacious’ on a scale of 1 to 5, 1 being not empirically supported and 5 being efficacious and specific. The authors noted that benefits were reported in the 5 randomized group studies (totaling 214 patients) included in their analysis; however, the ranking for neurofeedback for ADHD was based on the need for further studies controlled for patient and therapist factors that could unduly influence outcomes.

A study published in 2006 examined brain activity following neurofeedback in 15 children with ADHD. (9) The experimental subjects learned to inhibit the amplitude of theta waves (4 –7 Hz) and increase amplitude of beta waves (15 –18 Hz). Five children with ADHD were randomized to a non-treatment control condition. Functional magnetic resonance imaging revealed increased activation of the right anterior cingulate cortex, an area related to selective attention that previously was shown to be altered in children with ADHD. However, it could not be determined whether the change in brain function was related to the specific neural training program (decreasing the amplitude of theta waves and increasing the amplitude of beta waves) or to the additional attentional training received by the experimental group. A 2007 report from Europe compared neurofeedback training of slow cortical potentials (n =17) with a control group (n =13) who participated in a group cognitive/behavior training program. (10) The report stated that randomization was incomplete, because the age range in the group program had to be small, parents had to be available for intense training during neurofeedback, and some parents had a preference for one type of training. Results showed that children in the neurofeedback group improved more than children who had participated in a group therapy program, particularly for attention and cognition. However, parental support was found to account for more of the improvement than neurofeedback training performance.
To control for nonspecific effects (attention training) and confounding variables (parental engagement), Gevensleben and colleagues compared neurofeedback with a control intervention of participation in a computerized attention skills training in a European study. (11) All children were drug-naïve or drug-free without concurring psychotherapy for at least 6 weeks before starting training. The two training conditions were designed to be as similar as possible, using computer games, positive reinforcement by a trainer, homework, and parental encouragement in using the skills/strategies learned during training in real-life situations. Both groups participated in two blocks of 9 sessions (about 100 minutes per session plus a break), with 2–3 sessions per week, and parents were informed that both treatments were expected to be beneficial, but were not informed as to which type of training their child had been assigned. A total of 102 children were randomized in a 3:2 ratio; 8 children were excluded due to need for medical treatment, or non-compliance with the study protocol by either the children or their parents, resulting in 59 children in neurofeedback and 35 in attention training (92% follow-up). SCP and theta/beta training were compared by starting with one type of training in the first block and then the other (counterbalanced order) in the second block. Investigator evaluations were performed by the teachers, and were thus not blinded to the treatment. At the end of training/testing, there were no significant differences in parents’ attitude toward the two training conditions or in the perceived motivation of their children. About 40% of the parents either did not know which training their child had participated in or guessed the wrong group. Both parents and teachers rated the neurofeedback group as more improved on the hyperactivity subcomponent of a Strength and Disabilities Questionnaire (e.g., SDQ, 19% vs. 3% improved) and on a German ADHD scale (e.g., 26% vs. 9% improved). Thirty children in the neurofeedback group (52%) and 10 children in the attention training group (29%) improved more than 25% in the German ADHD scale (odds ratio: 2.68), which was the primary outcome measure. Other components of the SDQ, including emotional symptoms, conduct problems, peer problems, and prosocial behavior, were not different between the two training conditions. No significant differences were noted between the two neurofeedback training protocols. Results of this randomized controlled study suggested that neurofeedback may have specific effects on attention and hyperactivity beyond those achieved by attention training and parental involvement. The authors concluded that future studies should further address the specificity of effects and how to optimize the benefit of neurofeedback as a treatment module for ADHD. Information on the durability of the treatment effect is also lacking.

Substance Abuse

In a controlled study of 120 substance abuse patients being treated on an inpatient basis reported in 2005, Scott et al concluded that patients randomized to neurofeedback had better rates of drug abstinence at 1-year follow-up and remained in treatment longer than patients given additional treatment time equal to time spent in neurofeedback sessions (77% vs. 44%, and an average of 135 days vs. 101 days p < 0.005). (12) After 46 treatment days, the authors also reported that the Test of Variables of Attention (TOVA) significantly improved and that 5 of 10 scales of the Minnesota Multiphasic Personality Inventory-2 significantly differed in a positive manner in the neurofeedback group. While the authors indicated that the patients and testers were blind to group assignment for TOVA and MMPI testing, it is not clear how patients could be kept unaware of their assigned treatment groups while living in a residential treatment facility. In addition, the authors do not describe the additional treatment given to the control group. These factors of blinding and additional treatment could confound outcomes. Moreover, abstinence was not confirmed by urine or serum testing. A 2008 systematic review of neurofeedback as a treatment for substance abuse disorders described difficulties in assessing the efficacy of this and other substance abuse treatments, including the lack of clearly established outcome measures, differing effects of the various drugs, presence of comorbid conditions, absence of a gold standard treatment, and use as an add-on to other behavioral treatment regimens. (13) The authors concluded that alpha-theta training, when combined with an inpatient
rehabilitation program for alcohol dependency or stimulant abuse, would be classified as level 3 or "probably efficacious". This level is based on beneficial effects shown in multiple observational studies, clinical studies, wait-list control studies, or within-subject or between-subject replication studies. The authors also noted that few large-scale studies of neurofeedback in addictive disorders have been reported, and a shortcoming of the evidence for alpha-theta training is that it has not been shown to be superior to sham treatment.

Cognitive Performance

One small (n =6) quasi-randomized, double-blind pilot study examined whether increasing peak alpha frequency would improve cognitive performance in older adults (70 –78 years of age). (14) Control subjects were trained to increase alpha amplitude or shown playback of one of the experimental subject’s sessions. Compared to controls, the experimental group showed improvements in speed of processing for 2 of 3 cognitive tasks (Stroop, Go/No-Go) and executive function in 2 tasks (Go/No-Go, n-back); other functional measures, such as memory, were decreased relative to controls.

Relaxation

A randomized controlled trial on neurofeedback for relaxation conducted by Egner and colleagues found that alpha-theta feedback resulted in greater theta/alpha ratios, as compared to mock feedback suggesting enhanced relaxation. (15) However, there was no difference in subjective reports as both groups reported significantly lower levels of activation after training sessions.

Summary

The scientific evidence does not permit conclusions concerning the effect of the technology on health outcomes; a number of questions regarding clinical efficacy remain to be answered before applying neurofeedback techniques to patients with ADHD or substance abuse disorder. Neurofeedback is considered to be investigational; therefore, the policy statement remains unchanged.

Technology Assessments, Guidelines and Position Statements

The American Psychological Association (APA) provides general information on biofeedback (including neurofeedback) on their Web site “APA Online,” stating that “Biofeedback helps treat some illness, may boost performance, helps people relax and is even used to help children with Attention Deficit-Hyperactivity Disorder.” (16) A link to the Association for Applied Psychophysiology & Biofeedback (AAPB) is also provided. (17) The AAPB rates neurofeedback as efficacious (level 4 on a scale of 1–5 with 5 being the best) for ADHD, based on several small controlled and moderately large clinical studies showing that neurofeedback significantly helps children with ADHD who have problems with mathematics.

Guidelines on ADHD from the American Academy of Child and Adolescent Psychiatry in 2007 do not mention neurofeedback. (18)

The American Psychiatric Association’s 2006 guidelines on the treatment of panic disorder and substance abuse do not address neurofeedback. (19) No information on neurofeedback was identified on the Web site of the American Psychiatric Association.

No information on neurofeedback was identified on the ADHD site of the American Academy of Pediatrics. (20)

References:

1. 1997 TEC Assessment; Tab 21
<table>
<thead>
<tr>
<th>Codes</th>
<th>Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>CPT</td>
<td>90875–90876</td>
<td>Individual psychophysiological therapy incorporating biofeedback training by any modality (face-to-face with the patient), with psychotherapy; code range</td>
</tr>
<tr>
<td></td>
<td>90901</td>
<td>Biofeedback training by any modality</td>
</tr>
<tr>
<td>ICD-9 Procedure</td>
<td>94.39</td>
<td>Other individual psychotherapy (includes biofeedback)</td>
</tr>
<tr>
<td>ICD-9 Diagnosis</td>
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<td>Investigational for all codes</td>
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<tr>
<td>HCPCS</td>
<td>E0746</td>
<td>Electromyography (EMG), biofeedback device</td>
</tr>
<tr>
<td>Type of Service</td>
<td>Medicine; Psychiatry</td>
<td></td>
</tr>
<tr>
<td>Place of Service</td>
<td>Outpatient</td>
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Index

Biofeedback, EEG
EEG biofeedback
Neurofeedback

Policy History

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
<th>Reason</th>
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<tr>
<td>01/30/1998</td>
<td>Add to Medicine section</td>
<td>New policy</td>
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<td>Replace policy</td>
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<tr>
<td>10/09/03</td>
<td>Replace policy</td>
<td>Policy updated; no change in policy statement</td>
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<td>04/1/05</td>
<td>Replace policy</td>
<td>Policy updated with literature search; reference number 6 added; no change in policy statement</td>
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<td>07/20/06</td>
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<td>Policy updated with literature search; no change in policy statement. References numbers 10 and 11 added. E0746 added to code table</td>
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<tr>
<td>09/18/07</td>
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<td>Policy updated with literature search; reference numbers 13 and 14 added; no change in policy statement.</td>
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<tr>
<td>06/11/09</td>
<td>Replace policy</td>
<td>Policy updated with literature search; references added and reordered; no change in policy statement.</td>
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CPT Codes for EMG

Reimbursement

Data Management Ventures, Inc. conducts a nationwide survey among practitioners in the rehabilitative medicine field through an annual mail survey questionnaire. In October 2002, they reported the following dollar amounts charged for surface EMG (sample size 300, billing code 95999):

Surface EMG (one area, upper or lower spine, with interpretation and report)

- Average charged $75
- 20% charged $100 or more
- 10% charged $125 or more

Surface EMG (entire spine, with interpretation and report)

- Average charged $139
- 20% charged $200 or more
- 10% charged $225 or more

NOTE 1: These figures reflect the situation during the second half of 2002.
NOTE 2: A new survey was conducted in the fall of 2003. For other modalities and state specific information, please contact Data Management Ventures, Inc. (Tel. 770-592-7900, ask for “Fee Facts”).

CPT Codes

Some billing codes previously used for surface EMG were changed in 1995 and others were deleted or modified since then. Currently, there are several codes designated for surface EMG evaluation and therapy. Depending on the nature of each case, one of the following codes should suit your needs. We discourage you from using the needle EMG codes. Furthermore, regardless of the code you choose to use, always clearly specify that surface EMG was used.


CPT Codes Used in Conjunction with Surface EMG

Biofeedback

- 90901: Biofeedback training by modality
- 90911: Biofeedback training, perineal muscles, anorectal or urethral sphincter, including EMG and/or manometry

Neurology and Neuromuscular Procedures

- 95999: Unlisted neurological or neuromuscular diagnostic procedure
The QQC trivector device passes a changing low level field thru the item and generates a sophisticated picture of the electrical field of the item. It makes a 22×22×22 3D field that means over 10,000 separate frequencies to make one pattern. The shark senses these fields and they are amplified by the salt water. This study leads to the discovery of the electro-sense. Researchers have found that humans also have such a system but it is weak.

Every item has such a field. Living things have a changing reactive field, non-living things have a static field non-changing. We now know that the electro-sense in humans is the surface of the skin and most concentrated in the sense of smell.

So by measuring the Voltammetric electrical field of items and then amplifying the field 10 million times we get to really measure the patient’s reaction to items, really. So by applying a trivector Voltammetric pattern we can measure the response or evoked potential and see the patient’s reactivity.

So 5 million dollars were spent buying and procuring the items in the matrix and testing these items with a patented registered technology of modern science. This is why the SCIO device works so well, at each treatment from calibration, test etc these QQC signatures are at the heart. Real science, real technology, real legal compliance, real items, real results, real honesty and integrity.

In 5th grade we were taught we are made up of atoms made of electrons and protons and neutrons. The electrons in the outer level are so charged they never touch. We are made of electrical fields.

The QQC is a very advanced patented trademarked technology with a CE mark. It measures in a very sophisticated process the Voltammetric electrical field of any item. If you look up voltammetry in Google you see thousands of references for a world recognized very scientific chemical process also referred to as Polography.

You can see our patented process at http://www.voltametriaqqc.ro/

If you need more information on the SCIO and purchase details please get in touch with us

Maitreyka Kft.
tel: +3613036043
web: www.qxsubspace.com
e-mail: info@qxsubspace.com

Shark Senses
Mary Ann Badavi & Stephanie Parker

- A shark’s ampullae of Lorenzini are able to feel electric currents at short ranges.
- All living things emit a small electrical current, a shark can feel it from 0-8 Hz.
- The bonnethead shark has an electro-sense that is five million times greater than the electro-sense of humans.
- It is also thought that the Hammerhead shark evolved its head to increase surface area for electrical reception.

Electricity
Motion Analysis

- 96002: Dynamic surface electromyography, during walking or other functional activities, 1-12 muscles
- 96003: Dynamic fine wire electromyography, during walking or other functional activities, 1 muscle
- 96004: Physician review and interpretation of comprehensive computer-based motion analysis, dynamic plantar pressure measurements, dynamic surface electromyography during walking or other functional activities, and dynamic fine wire electromyography, with written report

Physical Medicine and Rehabilitation

Therapeutic Procedures

- 97110: Therapeutic procedure, one or more areas, each 15 minutes; therapy
- 97112: Neuromuscular reeducation of movement, balance, coordination, kinesthetic sense, posture, and proprioception
- 97116: Gait training (includes stair-climbing)
- 97530: Therapeutic activities, direct (one-on-one) patient contact by the provider (use of dynamic activities to improve functional performance), each 15 minutes
- 97750: Physical performance test or measurement (e.g., musculoskeletal, functional capacity), with written report, each 15 minutes
- 97139: Unlisted therapeutic procedure (specify)

Urinary System

Urodynamics (Under direct supervision of a physician:)

- 51784: Electromyography studies (EMG) of anal or urethral sphincter, other than needle, any technique

NOTE: Reimbursement varies among insurance carriers and different states. We encourage you to verify the current practices with local sources.
**CPT Codes for Hospital Outpatient Therapy**

**Payment System**

0209--Extended EEG Studies and Sleep Studies, Level II

**2005 Proposed APC Rate:** $668.45

**2004 APC Rate:** $629.82

Change 2004 v. 2005: $38.63/+6.13%

<table>
<thead>
<tr>
<th>CPT Codes</th>
<th>Definition of therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>95805 TC</td>
<td>MSLT</td>
</tr>
<tr>
<td>95807 TC</td>
<td>Sleep Study-attended</td>
</tr>
<tr>
<td>95808 TC</td>
<td>Polysomnography-attended</td>
</tr>
<tr>
<td>95810 TC</td>
<td>Sleep Staging w/4+add'l parameters - attended</td>
</tr>
<tr>
<td>95811 TC</td>
<td>Sleep Staging w/4+add'l parameters and CPAP or Bi-level ventilation-attended</td>
</tr>
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</table>
0213--Extended EEG Studies and Sleep Studies, Level I

2005 Proposed APC Rate: $198.91

2004 APC Rate: $158.53

Change 2004 v. 2005: $40.38/+25.47%

<table>
<thead>
<tr>
<th>CPT Codes</th>
<th>Definition</th>
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<tbody>
<tr>
<td>95806 TC</td>
<td>Sleep Study-unattended</td>
</tr>
<tr>
<td>95812 TC</td>
<td>EEG extended monitoring up to 1 hour</td>
</tr>
<tr>
<td>95813 TC</td>
<td>EEG extended monitoring more than 1 hour</td>
</tr>
<tr>
<td>95827 TC</td>
<td>EEG all night sleep only</td>
</tr>
<tr>
<td>95950 TC</td>
<td>Ambulatory EEG monitoring</td>
</tr>
<tr>
<td>95953 TC</td>
<td>EEG w/Computer-24 hour</td>
</tr>
<tr>
<td>95955 TC</td>
<td>EEG during non-intracranial surgery</td>
</tr>
</tbody>
</table>
0214--EEG

2005 Proposed APC Rate: $131.19
2004 APC Rate: $120.99
Change 2004 v. 2005: $10.20/8.43%

CPT Codes

<table>
<thead>
<tr>
<th>CPT Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>95816 TC</td>
<td>EEG w/ recording awake and drowsy</td>
</tr>
<tr>
<td>95819 TC</td>
<td>EEG w/ recording awake and sleeping</td>
</tr>
<tr>
<td>95822 TC</td>
<td>EEG, sleep only</td>
</tr>
<tr>
<td>95824 TC</td>
<td>EEG, cerebral death evaluation only</td>
</tr>
<tr>
<td>95829 TC</td>
<td>Electrocorticogram at surgery</td>
</tr>
<tr>
<td>95954 TC</td>
<td>EEG w/ drugs</td>
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<tr>
<td>95956 TC</td>
<td>EEG monitoring, cable/radio</td>
</tr>
<tr>
<td>95957 TC</td>
<td>EEG digital analysis</td>
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</table>

MEG
1528--New Technology Level XX ($5,000 - $5,500)

2005 Proposed APC Rate: $5,250.00

2004 APC Rate: $5,250.00
Change 2004 v. 2005: $0.00/0.00%

CPT Codes
95965 MEG, spontaneous

1516--New Technology Level XVI ($1,400 - $1,500)

2005 Proposed APC Rate: $1,450.00

2004 APC Rate: $1,450.00
Change 2004 v. 2005: $0.00/0.00%

CPT Codes
95966 MEG, evoked, single

1511--New Technology Level XI ($900 - $1,000)

2005 Proposed APC Rate: $950.00

2004 APC Rate: $950.00
Change 2004 v. 2005: $0.00/0.00%

CPT Codes
95967 MEG, evoked, each additional

Vagus Nerve Stimulation
2005 Proposed APC Rate: $60.33

2004 APC Rate: $114.22

Change 2004 v. 2005: $-53.89/-47.18%

<table>
<thead>
<tr>
<th>CPT Codes</th>
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<tbody>
<tr>
<td>95970 TC</td>
<td>Analyze neurostim, no programming</td>
</tr>
<tr>
<td>95971 TC</td>
<td>Analyze neurostim, simple</td>
</tr>
<tr>
<td>95972 TC</td>
<td>Analyze neurostim, complex</td>
</tr>
<tr>
<td>95973 TC</td>
<td>Analyze neurostim, complex</td>
</tr>
<tr>
<td>95974 TC</td>
<td>Cranial neurostim, complex – 1st hour</td>
</tr>
<tr>
<td>95975 TC</td>
<td>Cranial neurostim, complex – each</td>
</tr>
<tr>
<td></td>
<td>additional 30 minutes</td>
</tr>
</tbody>
</table>
0039 -- Implantation of Neurostimulator

2005 Proposed APC Rate: $11,997.90
2004 APC Rate for 0222: $12,832.02
Change 2004 v. 2005: $-832.12/-6.50%

CPT Code       Definition
61885 TC       Implant neurostim, one array

0040 -- Level II Implantation of Neurostimulator Electrodes

2005 Proposed APC Rate: $2,810.51
2004 APC Rate for 0225: $2,842.64
Change 2004 v. 2005: $-32.13/-1.13%

CPT Code       Definition
63650           Implant Neuroelectrodes
64555 TC       Implant Neuroelectrodes
64560, 64561, 64565 TC  Implant Neuroelectrodes

64575  Implant Neuroelectrodes

64581 TC  Implant Neuroelectrodes

0222 -- Implantation of Neurological Device

2005 APC Proposed Rate:  $11,845.6
2004 APC Rate:  $12,669.20
Change 2004 v. 2005:  $-823.60/-6.50%

<table>
<thead>
<tr>
<th>CPT Code</th>
<th>Definition</th>
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<tbody>
<tr>
<td>61886 TC</td>
<td>Implant neurostim, arrays</td>
</tr>
<tr>
<td>63685 TC</td>
<td>Implant Neuroreceiver</td>
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<tr>
<td>64590 TC</td>
<td>Implant Neuroreceiver</td>
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0225 -- Implantation of Neurostimulator Electrodes

2005 APC Proposed Rate:  $12,182.30
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<tr>
<td>63655 TC</td>
<td>Implant Neuroelectrodes</td>
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<tr>
<td>64553</td>
<td>Implant Neuroelectrodes</td>
</tr>
<tr>
<td>64573, 64577 TC</td>
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<tr>
<td>64580</td>
<td>Implant Neuroelectrodes</td>
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0687 -- Revision/Removal of Neurostimulator Electrodes

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<td>$1,115.31</td>
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<tr>
<td>Change 2004 v. 2005:</td>
<td>$+39.17/+3.51%</td>
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</table>
cell phones do affect the brain

the shields can help a little BUT

The SCIO can undo the damage by regulating and balancing the Body Electric's Regulatory Processes + increasing VARHOP

If you need more information on the SCIO and purchase details please get in touch with us

Maitreya Kft.
tel: +3613036043 | web: www.qxsubspace.com | e-mail: info@qxsubspace.com
0688 -- Revision/Removal of Neurostimulator Pulse Generator Receiver

2005 APC Proposed Rate:  $2,429.95

2004 APC Rate:           $2,549.89

Change 2004 v. 2005:      $-119.94/-4.70%

CPT Code       Definition

61888 TC        Revise or removal of cranial neurostimulator, pulse generator or receiver

Training for Unlicensed Health Care Professionals

Unlicensed health care professionals may provide screening and brief intervention services if they meet the following specific requirements outlined by DHS:

- Successfully complete sixty (60) hours of training related to provision of screening and brief intervention. This training will include the DHS approved-training and a minimum of thirty (30) training hours must be face-to-face.
• Screening and brief intervention services must be performed under the supervision of a licensed health care professional. The supervising physician is not required to complete training.
• The unlicensed health care professional must follow written or electronic protocols for evidence-based practice during the delivery of the screening and intervention services. Quality assurance procedures should be in place to ensure consistent adherence to protocols.

Total Health for Longevity

Published in Total Health for Longevity, June 2006

The Healthcare Codes Monopoly

By Dr. Carolyn Dean, MD, ND

Most people have no idea that there is a healthcare codes monopoly and don’t even know what it means. It’s time we did.

Billing Codes
The billing system of American healthcare is based on a complex coding system called Current Procedural Terminology (CPT codes). Established in 1966 by the American Medical Association (AMA), the codes garner the AMA hefty annual licensing fees. Each time a CPT code is used, the AMA gets paid.

There has never been a law against including codes to cover all healthcare practitioners but the AMA has developed very few codes for non-medical practitioners. This keeps other practitioners from becoming equal business partners in the world of insurance reimbursement for services rendered. CPT codes are designed to document what a medical doctor does for a patient. Think of a department or grocery store where every item has a bar code, and if it doesn’t, the item can’t be sold without a clerk running back to the aisle to find the price. Swiping a bar code across the cashier’s scanner not only calculates the price, but also automates inventory control and financial management. It’s the same for healthcare, without a code there is no way to calculate appropriate payment and no itemization of what has transpired. It’s that simple.

The current coding systems cover only a fraction of what is happening in healthcare—coded interventions are the only transactions that are tracked, marketed, and reimbursed. This is why so little is known about what transpires in the marketplace with regard to healthcare practitioners who are paid cash.

Without codes for all types of healthcare practitioners we can’t document the effectiveness of their care or the potential money that is saved by including them in insurance reimbursement. It’s a lose-lose situation. Patients lose, practitioners lose, and the nation keeps losing millions of dollars paid out to ineffective and costly drug-based medicine. For example, healthcare trends are tracked by data obtained
from insurance companies. Since insurance companies can’t measure data they don’t have, they have no way of knowing, for example, that patients who see midwives have a much lower rate of cesarean section, about 10-15%, compared to patients who are delivered by obstetricians with over twice the rate—of about 30%.

Lack of relevant data is also why we can only depend on small samples and surveys to tell us what forms of natural healing arts people are using because we have no other way of gathering the data. It’s Getting Worse, Not Better

There used to be state codes (HCPCS III) that individual states created to meet their needs. The state codes were abolished in 2003, costing many states’ Medicaid programs millions of dollars.

**Square Pegs in Round Holes**

Being required to fit everything a practitioner does into an allopathic/medical code leads to a high degree of inexactness. Because CPT codes include very few non-medical modalities, many doctors must limit their practice to allopathic medicine—so they can get paid by insurance, which, in turn, limits the type of care available to the public. Practitioners who use non-allopathic modalities have to fit their care into a CPT code—square pegs into round holes. For example, all states allow nurse practitioners to bill directly for their care, but they lack appropriate codes. So, while insurance companies may direct them to bill using CPT codes, the American Nurses Association has determined that CPT codes do not describe or document that the care is from a nurse. ABC codes solve this problem, for all practitioners by giving each practitioner their own set of codes.

**State of Exclusion**

Due to discrepancies in state “scope of practice laws”, insurance companies don’t know the scope of practice for each type of practitioner in each state, and because of potential legal liabilities, they just don’t pay for these services. To be fair, they don’t want to pay a claim illegally, but it suits them just as well to not pay—it saves them the hassle of processing claims without codes.

This graph shows practitioners left out by the medical monopoly in coding:

![Color-shaded Areas Indicate a Portion of the Gaps in National HIPAA Code Sets Addressed by ABC Codes](image-url)
Knowing the limitations of the CPT codes, a unique company called ABC Coding Solutions developed “ABC Codes” that describe services, remedies, and equipment items used by all healthcare practitioners, not just medical doctors. And, they include codes for most aspects of alternative medicine as well including homeopathic remedies.

Ms. Giannini, the CEO of ABC Coding Solutions knew the healthcare system was unhealthy. But it wasn’t until she experienced a chronic illness that she became a victim of it herself. She struggled with her illness for two years, going to medical doctors who billed her insurance company a total of $15,000—all legally coded and absolutely ineffective. After none of the medical treatments worked, it only took a few visits and with a doctor who provided care that was not in the CPT codes, and $500 in out of pocket expenses, to get her well.

Ms. Giannini found it incredible that an insurance company would gladly pay $15,000 for treatments that didn’t work and refuse to pay $500 for treatments that did. The doctor that helped her get well is one of millions of practitioners forced to operate outside the “system”, which also forces millions of patients like Ms. Giannini outside as well.

Playing Monopoly
The AMA was told by the federal government in 1993 to create codes for non-MDs, but they haven’t complied. It’s like asking Ford to create service and supply codes for Chrysler! Nobody is going to willingly stop something that works in their favor. Nurses have tried for decades to get nursing codes by participating on a coding panel with the AMA without much luck. And, as of 2006, out of over 8,000 CPT codes for medical care, there are only four CPT codes for chiropractors and acupuncturists, and massage therapists have one code.

Cut the Bureaucracy
ABC Coding Solutions keeps current on the legal scope of practice of all practitioners in all 50 states and ABC codes legally reflect the practices of more than 3 million underserved healthcare practitioners. But they are not meant to supercede the current codes; when used together with CPT and government codes, ABC codes support a complete, accurate, and precise documentation of patient encounters and a common language for comparing the economic and health outcomes of competing approaches to care. The fact that ABC Coding Solutions can determine if a code is legal or not saves billions in administrative costs spent haggling over inappropriate codes.

ABC Coding Solutions estimates that using ABC codes will save more than $51 billion per year in U.S. healthcare costs when implemented across the healthcare industry.

Using the example of the Medicaid Behavioral Health Department in Alaska, by using ABC codes in place of state codes that were retired in 2003, this department saved $2 million in one year. This department has thus far used ABC codes to process more than 500,000 health claim and payment transactions. A Medicare Advantage plan in New Mexico has paid claims on ABC codes for over five years with similar outstanding results.
Having ABC codes will not change healthcare overnight—but ABC codes are a big step in the right direction. Unlike technologies that cost millions and take years to return a profit, ABC codes are a turnkey operation and begin saving everyone money immediately. With ABC codes, insurance companies, government and the public will have information to make informed decisions on healthcare spending and reimbursement.

**Consumer Directed Healthcare (CDHC)**

CDHC and Health Savings Accounts (HSAs) are an attempt to “solve” the problem of rising healthcare costs. They raise consumer awareness about the real costs of healthcare and help people make better decisions about how to spend their healthcare dollars. However, they are currently set up using only the medical model of care and AMA CPT codes. They do not currently address the demands of millions of people who want alternate options to prescription drugs and surgery.

ABC codes, however, allow all practitioners to effectively document their care and thereby potentially participate in insurance reimbursement and HSAs. Thus ABC codes will help maximize the benefits of HSAs by providing consumer access to a wider variety of caregivers.

**What You Can Do**

ABC codes have been in use since 2003. However, ABC codes need to leap over one more hurdle. They need to be named a permanent government standard so that insurance reimbursement will be also become standard for all types of health care.

ABC codes are authorized for use through October of 2006. We have until then to lobby our elected officials to have ABC codes made a government standard. Please visit www.ABCcodes.com for information on how you can urge your elected officials to break the healthcare codes monopoly. From there you can send your elected officials an email urging them to support naming ABC codes a permanent government code-set. You may also contact ABC Coding Solutions at 1-877-621-5465.

We don’t need more caregivers in America, instead we need to rethink coding. Coding is creating an artificial bottleneck for direct consumer access to quality healthcare. Consumers are demanding choice in healthcare. You can help create choice by demanding that ABC codes are available to document the care that consumers are already using.

Carolyn Dean M.D., N.D. is a medical doctor, naturopathic physician, researcher, educator, and wellness consultant. She has written eleven highly-acclaimed books, the most widely read is *The Miracle of Magnesium* along with her most recent, *The Yeast Connection and Women’s Health, IBS for DUMMIES, and Hormone Balance: A Woman’s Guide to Restoring Health and Vitality*. Dr. Dean disseminates the message of health and self-responsibility in both private Wellness Telephone Consultations and at public seminars. You can find her at www.carolyndean.com.

As published in Total Health for Longevity Magazine, June 2006 by Dr. Carolyn Dean MD ND
WOW!!
I COULD'VE
HAD A
99214!!
The two body problem is easily solvable. This has been used by science for hundreds of years. A ball falls to earth, and we can calculate the two forces and get a good result. But when there are three bodies (ball, earth, moon) it gets very difficult, but still solvable, and when there are more bodies there is an unsolvable result. Science has struggled to reduce everything to the two body problem. This is called reductionism. So to test a drug they reduce the human to just one variable like blood pressure, give a drug and measure the change in blood pressure. Advanced Science has learned that complex systems such as the human body are fractal in nature and reductionism fails, so they have developed CHAOS theory. When more and more variables are measured we observe that there is complex results. Things never repeat, and some small stimulus can have large effects. This is called the butterfly effect. The EPFX device uses fractal chaos theory and was called the butterfly device in a English medical journal in 1990. Reductionism is an useless exercise of the small mind. All of science has no developed more non-linear analytical systems, all except medicine, which depends on reductionism to sell patent SINthetic drugs.

But the unconscious body electric is a very complex fractal and it is not a machine. What it will react to is sometimes not understood. A woman inhales a piece of a potato chip, she gets a cough, takes a cough suppressant, the body develops a cyst around the chip in the lungs, the chip is exposed to smoke toxins and or viruses and the cyst goes cancerous as the body last attempt to remove the toxic chip. The unconscious might see the problem is the chip not the cancer. The body electric might see the cancer as a helpful mechanism of detox. The EPFX allows a insight to the non-verbal body electric.

There are over one hundred trillion cells in the human body. Each cell is doing fantastic incomprehensible mathematical procedures. There is an innate intelligence beyond our comprehension to which we must be humble. So ten to the sixteenth bits of data are being transported to the brain, and the reticular formation filters them so that less than a million can go to the verbal brain. So the verbal brain is only aware of one percent of the happenings in the body. The non-verbal body electric is aware of the total. And there is a non-verbal unconscious that directs us. It is electrically reactive and it is the heart of our lives. It takes places and our verbal minds make up reason to explain why we are there. Many people are completely unaware of their unconscious and they struggle with every action. Others are more in tune and understand most of their actions. Only a small few are really in tune and live harmonious lives.

There is Adaptation response to the EPR and there is a variety of fractal reasons why the Xrroid results are not 95% accurate. The best results are 85%, and this is not enough to establish a confident status. So the Xrroid scores are disclaimed as not being diagnostic, but they are interesting. So the EPFX device is only sold to professionals, with the training to know that the Xrroid results are interesting and need to be more traditionally explored.
CPT Codes Are Listed on Your Appointment Receipt

Once you have identified the services and follow up services on your bill, you'll see that each one is lined up with a five digit code.

These are called CPT codes. Every single service a doctor will provide to you that he expects to be paid for, will align with one of these CPT codes. For a better understanding of CPT codes, where they come from and why they are used, take a look at What Are CPT Codes.

CPT codes are important to your doctor because they determine how much he will be paid for your visit. They are important to you because you want to be sure they are reflected accurately on your records. The wrong CPT codes can cause a ripple effect that might end up in the wrong diagnosis for you, the wrong treatment, and later, if you ever need to change insurance, it could cause denial of insurance for pre-existing conditions.

Just as you double checked the names of the services and follow up services provided, you'll want to make sure the CPT codes are correct, too. Match the CPT codes to their services.

If you find a discrepancy, you'll need to work with your doctor's office to correct your medical record.
Introductory

Physical Medicine
Years ago I was excited to see some infomercials about alternative medicine treatments for diseases. The speaker talked a good show and sold me to buy his books. But there was absolutely no real advice in the books, only multilevel companies with more to buy. This made me angry and then I decided to write the best self help books on natural medicine. Editing and collecting the best in real substantiated advice.

Desiré has written two incredible books and made movies to go with them. What to do for influenza and specifically what to do when the next major virus hits. A movie and a self help book designed to really help you and your families understand what to do to protect yourself.

Also cancer is such a devastating disease, and there are ways to help yourself in the kitchen with cooking for cancer patients. Full advice from soup to nuts on exercise, mediation, cooking and more. Coupled with a video for the science of how it works.

The health care debate is bringing a question of health and care. In this incredible new book Desiré has outlined a very thorough review of the real problems of Health Care. This book will tell you the truth the chemical companies do not want you to hear.
Retrieve Patient

Test & Exercise Options - Cervical (Neck)
Range of Motion

Warm Up
Static Test - Torque Readings

Static Test Graph
Dynamic Exercise Weight Set-Up

Dynamic Exercise
Lumbar (Back) Comments

CPT Codes
Lumbar (Back) Diagnostic Codes

[Diagram showing exercise options for lumbar (back)]

Exercise Options - Lumbar (Back)

- Exercise Time: 140 seconds
- Deg/Sec Back: 36
- Deg/Sec Pfd: 12
- Breathing Prompts: No
- Breathing Direction: Inhale in FWD (Eccentric)
- Graph Choice: Classic Chart
- Voice: Yes
- Warm Up: Yes
- Warm Up Time: 45 seconds
- Warm Up Weight %: 50

[Copyright (c) 2008 MedaView.com. All rights reserved.]
Print or View Reports – Lumbar

MedaView Screen Shots
Mental Stress/Trauma-Related Disorders
Using ICD-9-CM-2010 Codes

Mental stress or trauma is the major etiological agent of psychiatry. When mental stress or trauma is conceptualized as associated with the disorder and the event is known, it facilitates communication about the patient’s condition to indicate the stress or trauma. This can be done through use of the ICD-9-CM-2010 entities, which are listed in this section, that can be added to the syndrome diagnosed to clarify the trauma or stress that contributed to the syndrome. When using ICD-9-CM-2010, it is important that one use DSM-IV-TR’s criteria sets when they are available.

Some examples consistent with the criteria set of DSM-IV-TR and coding of ICD-9-CM-2010:
1. Anxiolytic dependence, continuous, and nightmares associate with late effects of terrorism, code 303.91, 307.47 and E999. Return of family member from military deployment, V61.02

2. Conduct disorder, childhood-onset type, associated with child sexual abuse, code 312.81 and 995.54

3. Generalized anxiety disorder and hallucinations associated with adult emotional abuse, code 300.02, 780.1 and 995.82. Noncompliant with treatment, V15.81.

4. Major depressive disorder, severe, with mood-congruent psychotic features associated with a rape, code 296.24 and E960.1

5. Oppositional defiant disorder, associated with child emotional abuse, code 313.81 and 995.51.

6. Panic disorder with agoraphobia associated with motor vehicle accident, code 300.21 and E929.0. Unemployed, V62.0.

7. Post-traumatic stress disorder and impulsivity, associated with late effects of war operations, code 309.81, 799.23 and E999.
Start the path to peak performance with SCIO at home

The SCIO can be prescribed for HOME USE to help your children with autism, attention difficulties, superlearning, sports, injury, pain, relaxation....

Home Use of SCIO

Monthly rental fees can be as low as 350 Euro a month.
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Maitreya Kft.
tel: +3613036043 | web: www.qxsubspace.com | e-mail: info@qxsubspace.com
1. The Promorphus (the First Shape) An Advanced Treatise on Quantum Vibrational Medicine
2. Essential Biofeedback and an Introduction to Unconscious Biofeedback
3. Superlearning Insights to Stimulating the Intellectual Mind
4. Registered Wellness Consultant Course
5. The Pathway of Pathology Unabridged
6. Anti Aging Quantic Treatise
7. Nelson's Essential Complex Homeopathy
8. Nelson's Essential Cardiology
9. Nelson's Essential CPR and Emergency Medicine for the Natural Health Therapist
10. Degenerative Disease and Cancer (A new understanding of potential cure)
11. Using the Auscultcardiogram / Fetaphone in Pregnant or non Pregnant Patients, Advances in Midwifery
12. Nelson's Essential Energetic Medicine
13. Nelson's Hematology - The Blood and It's Diseases, Microscopic Analysis
14. Nelson's Essential Homotoxicology
17. Nelson's Organic Pathology
18. Nelson's Essential Neurology
19. Symptom Operationalization For Homeopaths and SCIO Biofeedback Therapists
20. Nelson's Essential Physiology
22. Subspace and Quantum Indeterminacy Aspects of Biology
23. The Fallacy of Synthetic Drugs
24. Proceedings of the Natural Medicine Conference at the Royal Society of Medicine in London England
25. Care of The Small Intestine. The Magic Spot of Life
26. Venoms in Homeopathy
27. Care of the Woman and Her Diseases
28. What is the Xroid
29. Nelson's Essential Iridology
30. Nelson's Human Perception
31. Leaky Gut, Detection and Repair
32. Sworn on the Altar, (the true story of how one man fought the FDA to register the acupuncture needle)
33. Daniel's Story. The story of my son Daniel born autistic who was cured by energetic medicine
34. Proof of the Effect of the Mind (How and why science has improperly rejected and legally covered up the nonlocal universe premise proving the effects of the mind)
35. Towards a New Medicine (How and why medicine has plotted to cover up the fact that synthetic drugs are not compatible with the human and how natural medicine is the true medicine)
36. Towards a New Sport Medicine
37. Subspace – the collective unconscious and mathematical connection of all
38. Results of the world wide large scale study of the SCIO
39. Bio-Quantum Matrix
40. Quantum Vibrational Medicine
Introduction to Stress

By Alan T.

Well, today I want to talk about stress, briefly, text-bookly. We all have stress, sometimes (or all the time).

What we should know that stress is individualized. What causes stress for you may not be stressful for someone else.

Acute stress could be helpful. It can encourage you to meet a deadline or get things done. However, chronic stress can increase the risk of diseases like depression, heart disease and a variety of other problems.
How our body response to stress?

Our body have a stress circuit, that is hypothalamic-pituitary-adrenal (HPA) axis. HPA axis is a feedback loop by which signals from the brain trigger the release of hormones needed to respond to stress.
These compounds include epinephrine, norepinephrine and cortisol. Epinephrine increases blood pressure and heart rate, diverts blood to the muscles, and speeds reaction time. Cortisol, also known as glucocorticoid, releases glucose from the body reserves so that this essential fuel can be used to power the muscles and the brain.

Normally, cortisol also exerts a feedback effect to shut down the stress response after the threat has passed, acting upon the hypothalamus and causing it to stop producing corticotropin-releasing hormone (CRH). #CRH's role is to trigger more release of cortisol.

Therefore, acute stress may cause:

- Emotional distress (irritability, anxiety, and depression)
- Muscle problems (tension headache, back pain, jaw pain)
- Gastrointestinal problems (heartburn, gastritis, flatulence, diarrhea, constipation, and irritable bowel syndrome)
- Cardiovascular effects (high blood pressure, palpitations, sweaty palms)

But, it doesn't have enough time to do the extensive damage to the body.

Exposure to the cortisol may cause serious damage to our body. First, your body will be immunosuppressed (means your immune system will be down). When you are immunosuppressed, you are more prone to get various type of infectious diseases, and also, the risk of getting cancer is higher.

Then, cortisol is lowering down your body's insulin sensitivity. Means your body might not respond so well to insulin, causing the glucose level in the blood higher than normal. In long term, you will have higher risk of getting diabetes mellitus.

Next, long term exposure to cortisol also will cause osteoporosis.

In addition, it will also cause hyperlipidemia (high cholesterol level). Together with high glucose level, they are the main risk factors for cardiovascular diseases.

And, chronic exposure to cortisol, may lead you to get depression, chronic insomnia and also mood changes.
There are many more disorders that stress will bring. So, now, you know that how important is the stress management?

You know you're stressed out when...

you have a constant desire to exercise one specific finger over all others.

You know you're stressed out when...

come on, come on, set!!

you start thinking that sunsets take too long.
HCFA (Health Care Financing Administration) rules in favor of Medicare Coverage of urinary incontinence. The memorandum serves four purposes: 1) outlines the description and treatment of
2) reviews Medicare’s coverage history with respect to biofeedback for the treatment of urinary incontinence 3) analyzes the relevant scientific data related to biofeedback for stress, urge, and post-prostatectomy urinary incontinence, and 4) delineates the reason for a) supporting a positive national coverage decision for patients with stress and/or urge incontinence who have already undergone and failed a trial of pelvic muscle exercises and b) continues contractor discretion for the use of biofeedback as an initial treatment modality for urinary incontinence.

Thought Technology would like to thank the Continence Coalition for fighting for this and congratulations on your achievements on behalf of the industry as a whole.

For the memo visit [http://cms.hhs.gov/coverage/8b3%2Dx4.asp](http://cms.hhs.gov/coverage/8b3%2Dx4.asp)

<p>| | |</p>
<table>
<thead>
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<tbody>
<tr>
<td><strong>9081X</strong></td>
<td>Approximately 45-50 minutes.</td>
</tr>
<tr>
<td><strong>90875</strong></td>
<td>Individual psychophysiological therapy incorporating biofeedback training by any modality (face-to-face with the patient) e.g. insight oriented, behavior modifying or supportive psychotherapy) approximately 20-30 minutes.</td>
</tr>
<tr>
<td><strong>90876</strong></td>
<td>Individual psychophysiological therapy incorporating biofeedback training by any modality (face-to-face with the patient) (e.g. insight oriented, behavior modifying or supportive psychotherapy) approximately 45-50 minutes.</td>
</tr>
<tr>
<td><strong>90901</strong></td>
<td>Biofeedback training by any modality.</td>
</tr>
<tr>
<td><strong>90911</strong></td>
<td>Biofeedback training, anorectal including EMG and/or manometry.</td>
</tr>
<tr>
<td><strong>95999</strong></td>
<td>Unlisted neurological or neuromuscular diagnostic procedure.</td>
</tr>
<tr>
<td><strong>96150</strong></td>
<td>The initial assessment of the patient to determine the biological, psychological, and social factors affecting the patient's physical health and any treatment problems.</td>
</tr>
<tr>
<td><strong>96151</strong></td>
<td>a re-assessment of the patient to evaluate the patient's condition and determine the need for further treatment. A re-assessment may be performed by a clinician other than the one who conducted the patient's initial assessment.</td>
</tr>
<tr>
<td><strong>96152</strong></td>
<td>The intervention service provided to an individual to modify the psychological, behavioral, cognitive, and social factors affecting the patient's physical health and well being. Examples include increasing the patient's awareness about his or her disease and using cognitive and behavioral approaches to initiate physician prescribed diet and exercise regimens.</td>
</tr>
<tr>
<td><strong>96153</strong></td>
<td>The intervention service provided to a group. An example is a smoking cessation</td>
</tr>
</tbody>
</table>
program that includes educational information, cognitive-behavioral treatment and social support. Group sessions typically last for 90 minutes and involve 8 to 10 patients.

| **96154** | The intervention service provided to a family with the patient present. For example, a psychologist could use relaxation techniques with both a diabetic child and his or her parents to reduce the child's fear of receiving injections and the parents' tension when administering the injections. |
| **96155** | The intervention service provided to a family without the patient present. An example would be working with parents and siblings to shape the diabetic child's behavior, such as praising successful diabetes management behaviors and ignoring disruptive tactics. |
| **97112** | Neuromuscular Re-education (procedure). |
| **97535** | Self care / home management |
| **97750** | EMG Scanning complete muscle testing for physical therapists. |
| **99090** | Analysis of information data stored in computers. |
| **G0195** | Two relate to swallowing evaluation. G0195 for the clinical evaluation of swallowing function and G0196 for an evaluation. |

**APTA Reimbursement Pages**

- Information and advice on payment issues with private and commercial insurers: [www.apta.org](http://www.apta.org)
- Complete CPT Downloadable File (not free, but the complete coding manual is available online): [www.webstore.ama-assn.org](http://www.webstore.ama-assn.org)
- ICD-9 Codes: [www.mcis.duke.edu/standards/termcode/icd9](http://www.mcis.duke.edu/standards/termcode/icd9)
- HCPCS, in Alphanumeric Order: [www.hcfa.gov/stats/anhcpcd1.htm](http://www.hcfa.gov/stats/anhcpcd1.htm)
- Instructions and Codes for the HCFA-1500 claim form: [www.hcfa.gov/medicare/edi/1500mast.pdf](http://www.hcfa.gov/medicare/edi/1500mast.pdf)
Using MTENS, and TVEP the SCIO can treat the spinal area for injury and pain. Sending in an auto-focused sophisticated pulse different for each patient based on their personal electrical needs.
Clinical Policy Bulletin:

Nutritional Counseling

Number: 0049

Policy

1. Aetna considers nutritional counseling medically necessary for chronic disease states in which dietary adjustment has a therapeutic role, when it is prescribed by a physician and furnished by a provider (e.g., a registered dietitian, licensed nutritionist or other qualified licensed health professional such as nurses who are trained in nutrition) recognized under the plan.

2. Aetna considers nutritional counseling of unproven value for conditions that have not been shown to be nutritionally related, including but not limited to chronic fatigue syndrome and attention-deficit hyperactivity disorder.

Note: In all circumstances, the intent of this policy is to permit the nutritional counselor to function as a consultant to evaluate the member and coordinate ongoing care with the referring physician.

Background

Medical nutrition therapy provided by a registered dietitian involves the assessment of the person’s overall nutritional status followed by the assignment of individualized diet, counseling, and/or specialized nutrition therapies to treat a chronic illness or condition. Medical nutrition therapy has been integrated into the treatment guidelines for a number of chronic diseases, including (i) cardiovascular disease, (ii) diabetes mellitus, (iii) hypertension, (iv) kidney disease, (v) eating disorders, (vi) gastrointestinal disorders, (vii) seizures (i.e., ketogenic diet), and other conditions (e.g., chronic obstructive pulmonary disease) based on the efficacy of diet and lifestyle on the treatment of these diseased states. Registered dietitians, working in a coordinated, multidisciplinary team effort with the primary care physician, take into account a person’s food intake, physical activity, course of any medical therapy including medications and other treatments, individual preferences, and other factors.

De Luis et al (2009) assessed the utility of a hypo-caloric diet with Optisource versus nutritional counseling in obese patients with an indication of replacement surgery for degenerative osteoarthritis. A total of 36 patients were randomized into 2 groups: (i) diet I with lunch and dinner substituted by two Optisource [1109.3 kcal/day, 166.4 g of carbohydrates (60 %), 63 g of proteins (23 %), 21.3 g of lipids (17 %)] and (ii) diet II with nutritional counseling with a decrease of 500 cal/day from the previous dietary intake. Before and 3 months after treatment, a nutritional and biochemical study was performed. Nineteen patients were randomized in
group (i) and 17 patients in group (ii). All patients in group (i) and 14 patients in group (ii) finished the study. Weight loss was higher in group (i) than group (ii) (7.7 [4.7] versus 3.92 [3.32] kg; \( p = 0.05 \)), with a significant decrease of homeostasis model assessment (HOMA) and diastolic blood pressure in group (i). Decreases of body mass index (-2.9 [1.8] versus -1.4 [0.9]; \( p = 0.05 \)), fat mass (-3.8 [3.4] versus -2.3 [1.7] kg; \( p = 0.005 \)) and HOMA (-2.0 [2.2] versus -0.4 [1.82]; \( p = 0.05 \)) were higher in group (i) than group (ii). The authors concluded that obese patients with chronic osteoarthritis treated with a mixed diet supplemented with a commercial hypo-caloric formula improved weight, fat mass and HOMA in a better way than patients treated with a dietary counseling alone.

### CPT Codes / HCPCS Codes / ICD-9 Codes

<table>
<thead>
<tr>
<th>CPT codes covered if selection criteria are met:</th>
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<tbody>
<tr>
<td>90951</td>
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<td>97802</td>
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<td>97803</td>
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<tr>
<td>97804</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Other CPT codes related to the CPB:</th>
</tr>
</thead>
<tbody>
<tr>
<td>99401 - 99412</td>
</tr>
</tbody>
</table>

<p>| HCPCS codes covered if selection criteria are met: |</p>
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>G0108</td>
<td>Diabetes outpatient self-management training services, individual, per 30 minutes</td>
</tr>
<tr>
<td>G0109</td>
<td>Diabetes self-management training services, group session (2 or more), per 30 minutes</td>
</tr>
<tr>
<td>G0270</td>
<td>Medical nutrition therapy; reassessment and subsequent intervention(s) following second referral in same year for change in diagnosis, medical condition or treatment regimen (including additional hours needed for renal disease), individual, face to face with the patient, each 15 minutes</td>
</tr>
<tr>
<td>G0271</td>
<td>Medical nutrition therapy, reassessment and subsequent intervention(s) following second referral in the same year for change in diagnosis, medical condition or treatment regimen (including additional hours needed for renal disease), group (2 or more individuals), each 30 minutes</td>
</tr>
<tr>
<td>S9470</td>
<td>Nutritional counseling, dietitian visit</td>
</tr>
</tbody>
</table>

**Other HCPCS codes related to the CPB:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S9449</td>
<td>Weight management classes, non-physician provider, per session</td>
</tr>
<tr>
<td>S9452</td>
<td>Nutrition classes, non-physician provider, per session</td>
</tr>
</tbody>
</table>

**ICD-9 codes not covered for indications listed in the CPB (not all-inclusive):**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>780.71</td>
<td>Chronic fatigue syndrome</td>
</tr>
<tr>
<td>314.00</td>
<td>Attention deficit disorder, without mention of hyperactivity</td>
</tr>
<tr>
<td>314.01</td>
<td>Attention deficit disorder, with hyperactivity</td>
</tr>
</tbody>
</table>

**Other ICD-9-CM codes related to the CPB:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>250.00</td>
<td>Diabetes Mellitus</td>
</tr>
<tr>
<td>250.93</td>
<td></td>
</tr>
<tr>
<td>261</td>
<td>Nutritional marasmus</td>
</tr>
</tbody>
</table>

**Marasmus** is a form of severe protein-energy malnutrition characterized by energy deficiency.

A child with marasmus looks emaciated. Body weight may be reduced to less than 80% of the normal weight for that height. Marasmus occurrence increases prior to age 1, whereas kwashiorkor occurrence increases after 18 months.

The prognosis is better than it is in kwashiorkor.
### Signs and symptoms

The malnutrition associated with marasmus leads to extensive tissue and muscle wasting, as well as variable edema. Other common characteristics include dry skin, loose skin folds hanging over the glutei, axillae, etc. There is also drastic loss of adipose tissue from normal areas of fat deposits like buttocks and thighs. The afflicted are often fretful, irritable, and voraciously hungry.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>263.0 - 263.9</td>
<td>Malnutrition</td>
</tr>
<tr>
<td>272.0 - 272.4</td>
<td>Hypercholesterolemia/hyperglyceridemia/hyperlipidemia/hyperchylomicronemia</td>
</tr>
<tr>
<td>278.00 - 278.01</td>
<td>Obesity (non-covered by HMO plans)</td>
</tr>
<tr>
<td>307.1</td>
<td>Anorexia nervosa</td>
</tr>
<tr>
<td>307.50 - 307.59</td>
<td>Eating disorders</td>
</tr>
<tr>
<td>327.23</td>
<td>Obstructive sleep apnea (adult) (pediatric)</td>
</tr>
<tr>
<td>345.00 - 345.91</td>
<td>Epilepsy and recurrent seizures</td>
</tr>
<tr>
<td>401.0 - 405.99</td>
<td>Hypertensive disease</td>
</tr>
<tr>
<td>410.00 - 414.9</td>
<td>Ischemic heart disease</td>
</tr>
<tr>
<td>416.0 - 416.9</td>
<td>Chronic pulmonary heart disease</td>
</tr>
<tr>
<td>425.0 - 425.9</td>
<td>Cardiomyopathy</td>
</tr>
<tr>
<td>428.0 - 428.9</td>
<td>Heart failure</td>
</tr>
<tr>
<td>429.0</td>
<td>Myocarditis, unspecified</td>
</tr>
<tr>
<td>429.1</td>
<td>Myocardial degeneration</td>
</tr>
<tr>
<td>429.2</td>
<td>Cardiovascular disease, unspecified</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>429.3</td>
<td>Cardiomegaly</td>
</tr>
<tr>
<td>531.00 - 537.89</td>
<td>Gastric ulcer, duodenal ulcer, peptic ulcer, gastrojejunal ulcer, gastritis and duodenitis, disorders of function of stomach, and other disorders of stomach and duodenum</td>
</tr>
<tr>
<td>555.0 - 564.9</td>
<td>Regional enteritis, ulcerative colitis, vascular insufficiency of intestines, other and unspecified non-infectious gastroenteritis and colitis, intestinal obstruction, diverticula of intestine, and functional digestive disorders, not elsewhere classified</td>
</tr>
<tr>
<td>569.60 - 579.9</td>
<td>Colostomy and enterostomy complications, other specified disorders of intestine, and other diseases of digestive system</td>
</tr>
<tr>
<td>580.0 - 599.89</td>
<td>Glomerulonephritis, nephrotic syndrome, nephritis, renal failure, infections of kidney, calculus of kidney and ureter, and disorders of bladder</td>
</tr>
<tr>
<td>642.00 - 642.94</td>
<td>Hypertension complicating pregnancy, childbirth, and the puerperium</td>
</tr>
<tr>
<td>646.20 - 646.24</td>
<td>Renal disease in pregnancy childbirth, and the puerperium</td>
</tr>
<tr>
<td>648.80 - 648.84</td>
<td>Abnormal glucose tolerance complicating pregnancy, childbirth, and the puerperium</td>
</tr>
<tr>
<td>751.0 - 751.9</td>
<td>Congenital anomalies of digestive system</td>
</tr>
<tr>
<td>753.0 - 753.3</td>
<td>Congenital anomalies of kidney</td>
</tr>
<tr>
<td>780.39</td>
<td>Other convulsions</td>
</tr>
<tr>
<td>783.0 - 783.43</td>
<td>Symptoms concerning nutrition, metabolism, and development</td>
</tr>
<tr>
<td>V65.3</td>
<td>Dietary surveillance and counseling</td>
</tr>
<tr>
<td>V69.1</td>
<td>Inappropriate diet and eating habits</td>
</tr>
</tbody>
</table>

The above policy is based on the following references:


Drawing a connection between food, lifestyle and health

...an interview with Julie Barone, Holistic Health Counselor

Normalizing’ the concept of the environment-food-health connection is all in a day’s work for Julie Barone, HHC. A certified holistic health counselor, she introduces clients to whole foods nutrition and healthy lifestyles and weaves healthy cooking classes, shopping tips, stress management and even human-animal interaction into her solo practice.

A graduate of the New York, N.Y.-based Institute for Integrative Nutrition, Ms. Barone additionally completed the school’s immersion advanced study program. She also holds degrees in mathematics and interactive multimedia. Certified by the American Association of Drugless Practitioners (ADAP) as a Holistic Health Counselor (HHC), Ms. Barone is also a member of the American Holistic Health Association (AHHA), the National Health Association (NHA) and lifetime partner with The Physician's Committee for Responsible Medicine (PCRM).

Nutrition is important to a healthy lifestyle and to Ms. Barone's Personal Wellness programs for clients. But her People-Pet Wellness program also taps into the added dimension of human-animal interaction. Animals can help reduce stress, lower your blood pressure, motivate you to exercise and help you recover from emotional concerns such as depression, she says.

An animal lover who works with the Catskill Animal Sanctuary, Ms. Barone has studied animal communications with professional animal psychic Amelia Kinkade, author of Straight from the Horse's Mouth: How to Talk to Animals and Get Answers. Ms. Barone's role in a demonstration featuring animals from the sanctuary will be featured in Kinkade's upcoming animal communication book The Language of Miracles.

An active public speaker, Ms. Barone offers interactive lectures such as Beat the Sugar Blues, Eating for Energy, and Protein Basics. I'm motivated by knowing most people I speak to are not educated about basic health issues and there are small, easy changes most people would make if they had the knowledge, she says, noting her relatively young practice also benefits from the credibility speaking engagements and writing articles offer.
It is a scientific fact that when a low level voltage and micro-current pulse is applied to the body, osmosis, enzyme activity, and healing are increased. The SCIO will let the patient's body electric autofocus a harmonic pulse to maximize this effect. This current applied to the cranium has been shown to help autism, attention deficit and hyperactive children. It has been shown helpful for anxiety, addictions, emotional disturbances, and insomnia.

There is published research on these therapies. The new world of energetic medicine can help you.
Students seeking a holistic health counseling education should consider their special interests in the health field or on a personal level and should also expect to do a lot of reading, Ms. Barone reports. One more thing to expect: one half of what they read will contradict the other half and they're probably both right, she says. You should learn that there are many valid theories, but they aren't all valid for every client it depends on the individual.

Ms. Barone & Her Career

Tell us about your career as a certified holistic health counselor. How did you break into the field?

I became a holistic health counselor somewhat haphazardly. I didn't know that this was the career I wanted to pursue. I always had an interest in living a healthy lifestyle for myself. I took a job at a medical office while my husband was in grad school and I saw a real disconnect between the doctors and patients, and between lifestyle and disease. The patients became numbers, body parts and procedure codes. The doctors would drink endless cups of coffee and order take-out for lunch. How can you not connect the dots between your own smoking and looking at CAT scans of lung cancer week after week?

I left that environment with the intention of writing a cookbook and figuring out what I wanted to do as a career. I knew I wanted to do something that was health-related and involved food, maybe become a chef. That's when I discovered health counseling.
What led you to seek healthcare opportunities outside of traditional western medicine?

I had never had a good personal experience when seeing a traditional western doctor. In most cases I felt I wasn't listened to, was offered medications that had nothing to do with my office visit or that I was better informed on whatever my health concerns were than the practitioner. I was also frustrated by the lack of connection between lifestyle and health in the western medical community.

Pets are also part of your practice, and you will be featured in upcoming book *The Language of Miracles* by animal communications expert and mentor Amelia Kinkade. How did you get interested in the pet-people connection? How does it impact your holistic health counseling?

When I quit my job at the medical office, I knew I wouldn't be able to monetarily support charities that I used to. I still wanted to support these issues, so I looked for volunteer opportunities at local animal shelters. I started volunteering at Catskill Animal Sanctuary, a shelter for horses and farm animals. Three years later, I have many inter-species stories of healing to tell. I took a part-time job at the sanctuary, and now work in its education program teaching people about the health effects of factory farming and conducting on-site cooking classes. Through my work at the sanctuary, I was able to participate in an animal communications workshop by Amelia Kinkade; some of the sanctuary's animals were the practice animals, and I was a horse handler for the weekend. I began the workshop skeptical that anyone but Amelia would be able to talk to the animals. It turns out I have a natural ability. I still consider myself a student of animal communications, but I've had some fascinating conversations.

I did more research into animals and healing and discovered there is scientific evidence that supports things many pet parents' have known. Animals can help reduce stress, lower your blood pressure, motivate you to exercise and help you recover from emotional concerns such as depression. I combined all these things communications, factory farming issues, community service, the love between pet and human into my People-Pet Wellness program. The focus is still on the human, but there is the added dimension of human-animal interaction.

What do you enjoy most about your nutrition-based holistic role in patient care? About other areas of your practice?

I really enjoy the hands-on aspect of getting people into the kitchen to cook their own food. I'm still surprised at the number of educated adults that can't cook a meal unless it comes in a package. I like to take my clients to the health food store or the farmers market and show them how to pick out fresh vegetables and then send them home with easy recipes.

I also enjoy empowering people to take charge of their lives and set goals, not just for their health but for all areas of their lives. Teaching time management skills (a prerequisite for daily home cooked meals) helps all areas of my clients' lives. It gives them the opportunity to ask
themselves how do I really want to spend my time? They often have great ideas and goals to pursue that have been on the back burner for too long.

You are a member of several holistic healthcare organizations. How do such groups support your professional goals?

The holistic health care organizations that I belong to offer conferences, keep me up to date on nutrition news and are a vehicle to let potential clients know about my services.

You act as a speaker on various holistic health counseling issues. What drives you to be involved with these types of educational efforts?

I still think of myself as a small-time speaker, but once I get going the passion is pretty big. I'm motivated by knowing most people I speak to are not educated about basic health issues and there are small, easy changes most people would make if they had the knowledge. My practice is still relatively young, so speaking and writing articles also help me establish credibility among people who are hearing about me for the first time.

What unique challenges and rewards come from working with your patients in an independent holistic health counseling setting?

The rewards of being independent: I get to set my own schedule, I have a home office, I do most of my work over the telephone and I can choose not to work with a client if I don't think we'd be a good match.

The downside of being independent: I don't get to split advertising costs with other practitioners, it's more challenging to network with other practitioners since we're not in a common office/building and I am my own support staff, so I still make my own copies, run errands and schedule appointments.

What are some of your personal and/or professional goals for the future?

My practice is in a growth phase. I hope to attend several national health conferences over the next year and to take some advanced animal communications courses.

The Actual Work

Describe a typical day (or week) of work for you.

On a typical day I have several hour-long phone consultations with clients in the morning with networking and errands in the afternoon. Once or twice a week I make copies and shop for supplies I send my clients books, CDs, cooking tools, recipes and handouts. I follow up with my clients by e-mail, and respond to e-mail inquiries about my practice. Follow up is very important, both with clients and business contacts. When I do a cooking class I prepare one or two days ahead of time by shopping for ingredients and making recipe packets.
On a basic level, what skills does your job demand?

My job demands excellent listening skills, compassion, cooking skills, knowledge of the body's various systems and an understanding of whole foods, stress and time management.

What are the tools of the trade that you use the most? Favorite gadget?

In the office I use my laptop and PDA to communicate with clients and schedule appointments. In the kitchen I tend to like old fashioned hand tools rather than gadgets (except for my blender). My favorite old-time hand tool is my citrus knife it really does slice lemons better than any other knife!

What are some common myths about the holistic health counseling profession?

I haven't heard a lot of myths. I think the biggest misconception is that it's not as good as becoming a dietician.

Who are the biggest inspirations for your career?

My parents and both sets of grandparents all had organic gardens when I was growing up. I think that's been a big influence on my career path.

Best patient care tip for a novice?

Never take away your client's favorite food. Even if it's the most horrible junk food, it needs to be the client's decision to give it up. Keep adding in good foods and one day they will stop craving the junk, and will be empowered by it being their own decision.

Can you share a patient care anecdote that exemplifies your holistic practice?

I took an MD with few cooking skills on a shopping trip. I was able to teach her how to pick out fresh produce. We then had a cooking lesson. She was amazed at how easy it is to make vegetable soup, burritos and baked tofu. Now she's cooking for her friends.

Do you feel that is important for someone to be passionate about the healthcare and nutrition field in order to be successful as a holistic health counselor?

Yes! You should be passionate about whatever career you choose in order to be happy with your work.

What contributions do you feel holistic healthcare has made to society?

We're only just beginning to see the contributions from holistic health care. Making vitamin supplements, whole foods and an awareness of the environment-food-health connection 'normal' is one of the most recognizable contributions.
Education Information & Advice

How did you decide to seek holistic healthcare training at the Institute for Integrative Nutrition?

Once I settled on nutrition as my field of study I researched schools in the Northeastern United States. I was turned off by several dietitian programs that had sponsorships from the beef and dairy industries on their web sites. Integrative Nutrition teaches nutrition theories from around the world, not just the USDA food pyramid.

Tell us about your studies. What did you like and dislike about your training? How did you build on previous educational experiences?

Integrative Nutrition is not a traditional school. The training was very intense during weekend classes followed by conference calls and web forums. I had a mentor to guide me through the program, to act as my health counselor and to model counseling techniques for me. There was nothing about the program that I disliked. It was completely different from my past education

- I have degrees in mathematics and interactive multimedia.

How can prospective holistic healthcare students assess their skill and aptitude?

Passion about the field is the most important skill. If you have the passion, you'll learn the material. Integrative Nutrition has a quiz in the back of its catalog to see if health counseling might be a good career option for you.

What factors should prospective students consider when choosing a school? Are there any different considerations for those who know that they want to specialize in a certain naturopathic/holistic field?

Students should look at accreditation. There are a number of holistic schools that are not accredited and degrees from those institutions are questionable. If you want to work in a hospital or nursing home type of setting, you may want to consider a holistic program at a school that also teaches western medicine.

What can students applying to naturopathic/holistic schools or programs do to increase their chances of being accepted?

Read as many books on natural healthcare as you can. You'll be doing this for the rest of your career anyway to stay on top of trends, new research and to expand your knowledge.

What should students expect from a holistic health counseling curriculum? How available are hands-on learning experiences?

In a holistic health counseling curriculum, students should expect to do a lot of reading, that one half of what they read will contradict the other half and they're probably both right! You should learn that there are many valid theories, but they aren't all valid for every client it depends on the individual. At Integrative Nutrition, about 10% of the students are accepted
into an advanced program where they get to mentor the students below them in a supervised setting. I was able to follow 10 people over eight months this way.

How do you feel that the healthcare education system could be changed to better serve society?

I think the changes need to start in elementary, middle and high school health curriculums. Students need to learn how to care for and nourish their bodies, and need access to fresh, wholesome foods in the cafeteria. In higher education, anyone earning a medical, nursing or related degree should be required to take classes in holistic medicine and nutrition presented in ways that are relevant to their career paths.

What other advice can you give to prospective students thinking about an education and career in the holistic health counseling field?

Go to school open houses and orientations. Talk to the teachers and students to see if their philosophy matches your own. Schedule appointments for yourself with various types of practitioners so you have an idea of what it's like to do that type of work. There are many modes of holistic healing you can experience. If you're not sure, try taking a job (or internship) in a holistic practitioner's office or a health food store to see if you like working with clients in that setting.
Industry Trends, Information & Advice

How can the reality of holistic health counseling as a career differ from typical expectations?
The counseling aspect is easy compared to the business aspect. Some people think that as soon as you graduate, you open an office and clients will show up at the door. As a holistic practitioner, you need both skill sets. Even if you're an excellent practitioner, you need to work at getting clients and building your business.

What are some of the trends that you see in holistic health counseling which could help students plan for the future?

Corporate wellness programs are growing in popularity. A willingness to work with large groups instead of individual clients can help with future planning.

What topics are emerging as hot issues in the overall healthcare field that will impact holistic health counseling?

Healthy aging, longevity and disease prevention are all hot topics. Encouraging people to work with a health counselor before they get sick will have a positive impact.

What are considered the hottest holistic specialties developing over the next decade?

Integrated practices offering multiple healing options are gaining popularity. These practices are either one person trained in several areas or one-stop shopping of several practitioners working together in one office.

How is the job market now in the health counseling field? How do you think it will develop over the next five years?

Holistic health counseling is growing and I expect it to continue to grow over the next five years and beyond.

How has the popularity of the Internet affected holistic health counseling?

The Internet has let more people know that health counseling is an option. I'm able to work with clients in several states who have found my practice through my website.

What other career advice can you offer future naturopathic/holistic health counseling specialists?

If there is some area you have a special interest in, make that a part of your practice. It may be a particular illness, a demographic you prefer working with or a hobby that you have. Even though this is serious business, have fun everyday and encourage your clients to do the same.

Closing Remarks

Is there anything else you can tell us about yourself, your career or the holistic health counseling profession that would be interesting or helpful to others aspiring to succeed in the field?

Your career may not be a straight line; it may have many twists and turns. It's the path you take, not the destination, that's important. Each bump in the road will be a lesson you can use to help yourself or your clients. Enjoy the journey.
COST of Health Care in America

America is not the leader in health care, but for only one criteria. America is not the leader in fact. America is way behind in all criteria of health, longevity, child survival, morbidity, disease susceptibility, and all except on criteria. That criteria is COST. Americans pay the proverbial nose for health care. In fact the regulatory agencies FDA are not concerned with disease causing industries like Big Tobacco, Big Sugar, Big Fast Foods or Big Pharma. The FDA is concerned with drugless therapies such as natural or energetic medicine, proved safe and effective. The hypocrisy is momental and financially burdensome for the American people. In fact there is profit in promoting disease for a disease care system.

When corporations run the Health Care System, profit for the stockholders is paramount. Thus the more disease there is the more profit there is. By definition corporations are psychopathic as they care about profit over people. So there is no interest whatsoever in making people healthy, symptom control by prolonged medications is better.

A true Health Care System of healthy lifestyle education, early prevention of disease, and safe and natural methods of disease prevention and early treatment would not only make people healthier but would dramatically reduce cost. If people were taught the dangers of high glycemic dextrose foods, if these foods were better controlled, if the dangers of bad fatty acids and trans fatty acids were controlled, if Tobacco was removed from sale. The cost of health care would dramatically improve. The angel has designed a new type of medicine after the work of Dr. Hans Selye to help people not to develop disease, and to dramatically reduce disease. But the Angel’s efforts are a thorn to the SINthetic chemical companies and the Disease Care System in America.

When profit is removed form the medicine, then we can go from a profit based disease care system to an improved Health Care System. And the savings of money and lives will be fantastic.
IT IS A SCIENTIFIC FACT THAT A LOW LEVEL VOLTAMMETRIC PULSE CAN INHIBIT PAIN SIGNALS.

THE SCIO WILL LET THE PATIENT'S BODY ELECTRIC AUTOFOCUS A HARMONIC PULSE TO MAXIMIZE THIS EFFECT. THIS IS CALLED MICRO-CURRENT TRANSCUTANEOUS ELECTRO-NERVAL STIMULATION

AND CAN HELP YOU TO REDUCE PAIN WHILE HELPING YOU FIND THE CAUSE...

If you need more information on the SCIO and purchase details please get in touch with us

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tel: +3613036043
web: www.qxsubspace.com
e-mail: info@qxsubspace.com
CPT Codes for The Scio

These are excerpts from a recent CPT code manual showing the possible insurance billing payments made by biofeedback and energetic medicine. If you use a superbill and are an approved supplier of services then a biofeedback therapist could get payment.

pain rehabilitation service

97032 APPLICATION OF A MODALITY TO ONE OR MORE AREAS; ELECTRICAL STIMULATION (MANUAL), EACH 15 MINUTES

97112 THERAPEUTIC PROCEDURE, ONE OR MORE AREAS, EACH 15 MINUTES; NEUROMUSCULAR REEDUCATION OF MOVEMENT, BALANCE, COORDINATION, KINESTHETIC SENSE, POSTURE, AND/OR PROPRIOCEPTION FOR SITTING AND/OR STANDING ACTIVITIES

This list is not an all inclusive list. Other rehabilitation modalities may be used in addition to those described in this policy.

9 INDIVIDUAL PSYCHOTHERAPY, INSIGHT ORIENTED, BEHAVIOR MODIFYING AND/OR SUPPORTIVE, IN AN OFFICE OR OUTPATIENT FACILITY, APPROXIMATELY 20 TO 30 MINUTES FACE-TO-FACE WITH THE PATIENT;

9 INDIVIDUAL PSYCHOTHERAPY, INSIGHT ORIENTED, BEHAVIOR MODIFYING AND/OR SUPPORTIVE, IN AN OFFICE OR OUTPATIENT FACILITY, APPROXIMATELY 20 TO 30 MINUTES FACE-TO-FACE WITH THE PATIENT; WITH MEDICAL EVALUATION AND MANAGEMENT SERVICES

9 INDIVIDUAL PSYCHOTHERAPY, INSIGHT ORIENTED, BEHAVIOR MODIFYING AND/OR SUPPORTIVE, IN AN OFFICE OR OUTPATIENT FACILITY, APPROXIMATELY 45 TO 50 MINUTES FACE-TO-FACE WITH THE PATIENT;

9 INDIVIDUAL PSYCHOTHERAPY, INSIGHT ORIENTED, BEHAVIOR MODIFYING AND/OR SUPPORTIVE, IN AN OFFICE OR OUTPATIENT FACILITY, APPROXIMATELY 45 TO 50 MINUTES FACE-TO-FACE WITH
LMRP Description Chronic pain is difficult and frustrating to manage, and patients who experience it are often viewed as being undesirable to treat. Patients with chronic pain are often characterized by low levels of activities of daily living (ADLs), a high demand for medication accompanied by physical and psychological dependency, high verbalization of pain, and the inability to work. In many cases, patients with chronic pain are so entrenched in pain behavior that a behavior modification approach is essential.

Pain rehabilitation programs are an innovative approach to the treatment of intractable pain. The goal of such programs is to give patient’s the tools to manage and control their pain, and thereby, improve their ability to function independently. Indications and Limitations of Coverage and/or Medical Necessity Patient Medical Necessity Criteria

Services furnished under outpatient hospital pain rehabilitation programs are considered medically necessary and appropriate if:

1. The patient’s pain is attributable to a physical cause;

2. The usual methods of treatment have not been successful in alleviating pain; and

3. A significant loss of ability by the patient to function independently has resulted from pain.

In addition, the following criteria must also be met:

1. The patient must be under the care of a physician;

2. The patient must have an evaluation which must include an evaluation of the physiological,
psychological, and social aspects of pain;

3. The patient must have an individualized treatment plan which is specific to their needs and functional limitations;

4. The patient must exhibit limited functional status in relation to performance of ADLs;

5. The patient must have the cognitive ability to understand and carry out instructions and must be compliant and cooperative; and

6. The patient must demonstrate a high level of motivation to participate in their plan of care. The level of patient participation is usually measured by the team members and documented in the progress notes.

**Clinical Guidelines**

To enter the program, the patient must undergo an extensive evaluation. A problem-solving group attempts to identify the medical, behavioral, vocational, financial, social, and other significant problems of the patient. Coverage of services furnished under outpatient hospital pain rehabilitation programs, including services furnished in group settings under individualized plans of treatment, is available if the patient meets the criteria listed in this policy.

A pain rehabilitation program is one that employs a coordinated multidisciplinary team to deliver, in a controlled environment, a concentrated program which is designed to modify pain behavior through the treatment of physiological, psychological, and social aspects of pain. Such programs generally include diagnostic testing, skilled nursing, psychotherapy, structured progressive withdrawal from pain medication, physical therapy and occupational therapy to restore physical fitness (mobility and endurance) to a maximal level within the constraints of a physical disability, and the use of mechanical devices and/or activities to relieve pain or modify a patient’s reaction to it (e.g., nerve stimulator, hydrotherapy, massage, ice, systemic muscle relaxation training, and diversional activities). The activities of this program are under general supervision and, as needed, direct supervision of a physician.

The multidisciplinary pain approach begins with a complete clinical evaluation. Comprehensive medical and psychosocial evaluations with particular emphasis on functional capabilities and behavioral responses to pain are essential. Previous medical records should be obtained to avoid repeating appropriately performed studies and unsuccessful treatment approaches.

The multidisciplinary team functions at several levels within the treatment process. They attempt to identify and resolve documentable organic problems when present and to improve the patient’s ability to cope with pain. In addition, considerable effort is devoted to improving the patient’s functional outcome, as measured by increased activity time, improved activities of daily living, increased distance
walked, and increased tolerance for specific homemaking or vocational activities.

Pain rehabilitation services must be rendered under a written plan of care/treatment. The plan must:

1. Be consistent with the nature and severity of the individual’s symptoms and diagnosis and tailored to meet their specific needs;

2. Be reasonable in terms of the modality, amount, frequency, and duration of the treatment;

3. Include services which are generally accepted by the professional community as safe and effective treatment for the purpose used;

4. Be developed upon admission and establish specific individualized objectives, measurable, functional goals and how the goals will be met; and

5. Be signed by a physician.

Each pain rehabilitation session should be documented and it should reflect the treatment provided and the patient’s response toward their goals.

Diagnostic tests may be an appropriate part of pain rehabilitation programs. Such tests would be covered on an individual basis only when the diagnostic test can be reasonably related to the patient’s illness, complaint, symptom, or injury, and when they do not represent an unnecessary duplication of tests previously performed.

The average program will usually last 4 weeks on an inpatient or outpatient basis or a combination thereof.

Reasons for Denials A pain rehabilitation service will be denied for the following circumstances:

1. When the services do not meet all the criteria listed in the “Indications and Limitations of Coverage and/or Medical Necessity” section of this policy.

2. When a patient has a severe psychiatric disturbance which would not allow them to comprehend and retain new learning.

3. When the documentation indicates that the patient is not demonstrating progress toward achieving stated goals within a reasonable period of time. The time frame is included on the plan of care.

4. When the patient has attained his/her pain rehabilitation goals and does not require the skills of a qualified clinician.
5. When the documentation indicates a duplication of services (e.g., an overlap of physical and occupational therapies).

6. Some pain rehabilitation programs may utilize services and devices which are excluded from coverage, (e.g., acupuncture, vocational counseling). Some of the services that may be utilized have limited coverage criteria, (e.g., biofeedback, dorsal column stimulator, family counseling services). See Coverage Issues Manual (CIM) for coverage criteria.

7. Pain rehabilitation will be considered noncovered when chronic pain has resulted from a mental condition, rather than from any physical cause.

1. Chemical dependency should not be the primary diagnosis. The chemical dependency must be secondary to the pain syndrome.

Documentation Requirements The following documentation must be maintained in the patient’s medical record:

1. A physician order or referral for the Pain Rehabilitation services written by the treating physician (who evaluated the patient and determined that a medical need and rehabilitation potential exists).

2. A copy of the evaluation/assessment performed by the treating physician which establishes that the patient has a medical need for Pain Rehabilitation services and rehabilitation potential.

3. An evaluation/assessment of the patient performed by a physician and/or qualified staff members upon admission to the Pain Rehabilitation program to ensure the patient meets medical necessity criteria for the program.

4. An individual treatment plan which contains an individualized problem list, the specific procedure or activity to be done and the responsible discipline, the frequency and duration of the service(s), individual treatment goals (which are objective, measurable, and functional) and a discharge plan. The treatment plan(s) must be dated and signed by the physician.

5. Daily documentation (progress notes) which reflect the individualized activity, instruction given, the patient’s response to the skilled service, and the patient’s progress toward stated goals. The daily note must be signed by the qualified team member who rendered the service.

6. Regular team conference notes that reflect the individual patient’s goals and progress.

7. Discharge summary to indicate the changes since the start of care, goals accomplished, the reason why goals were not achieved (if applicable), and the discharge plan.

Each progress note must be legible, dated, signed, and the credentials of the qualified person rendering
the service must be present. In addition, if the HCPCS code billed is based on time, then the time spent by the provider in a face to face encounter with the patient should be documented.

So to end degenerative disease we must

1. Make Big Tobacco pay for the damages they incur
2. Must stop sales of cigarettes
3. Make Big Sugar pay for the damages they incur
4. Make Big Pharma pay for the damages they incur
5. End allopathic philosophy and develop a new stressor reducing based medicine
6. Avoid Bad white processed sugars. Eat Good Sugars from fresh fruit. Avoid bad oils cooked or saturated. Eat good oils from fresh and raw vegetable and uncooked low temperature made oils.
8. Safe forms of early intervention medicine such as energetic biofeedback
9. Recognize the powers of the mind such as in the EPFX/SCI0 system.
10. Recognize the need for an energetic medicine to safely evaluate the body electric and balance the aberrations of the body electric. We need to use a more modern medicine utilizing the body electric without emphasis on synthetic chemistry.
11. Recognize that the SINthetic experiment has failed and we should be using the synthetics only in extreme cases when the natural remedies fail. Quantum Electrodynamics has further proven the problem of synthetic chemistry.
12. Allopathy does not work, we must adapt a safer and more extensive theory of medicine.

With these social changes degenerative disease could be so greatly reduced to allow for an inexpensive medicine.
HCFA (Health Care Financing Administration) rules in favor of Medicare Coverage of urinary incontinence. The memorandum serves four purposes: 1) outlines the description and treatment of urinary incontinence 2) reviews Medicare’s coverage history with respect to biofeedback for the treatment of urinary incontinence 3) analyzes the relevant scientific data related to biofeedback for stress, urge, and post-prostatectomy urinary incontinence, and 4) delineates the reason for a) supporting a positive national coverage decision for patients with stress and/or urge incontinence who have already undergone and failed a trial of pelvic muscle exercises and b) continues contractor discretion for the use of biofeedback as an initial treatment modality for urinary incontinence.

Thought Technology would like to thank the Continence Coalition for fighting for this and congratulations on your achievements on behalf of the industry as a whole.

For the memo visit [http://cms.hhs.gov/coverage/8b3%2Dx4.asp](http://cms.hhs.gov/coverage/8b3%2Dx4.asp)

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<tr>
<th>CPT Code</th>
<th>Description</th>
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<tr>
<td>9081X</td>
<td>Approximately 45-50 minutes.</td>
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<tr>
<td>90875</td>
<td>Individual psychophysiological therapy incorporating biofeedback training by any modality (face-to-face with the patient) e.g. insight oriented, behavior modifying or supportive psychotherapy) approximately 20-30 minutes.</td>
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<tr>
<td>90876</td>
<td>Individual psychophysiological therapy incorporating biofeedback training by any modality (face-to-face with the patient) (e.g. insight oriented, behavior modifying or supportive psychotherapy) approximately 45-50 minutes.</td>
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<tr>
<td>909</td>
<td>Biofeedback training by any modality.</td>
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<td>Page 81 of 112</td>
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| 0 1          | Biofeedback training, anorectal including EMG and/or manometry. |
| 9 0 9 1 1    | Unlisted neurological or neuromuscular diagnostic procedure. |
| 9 5 9 9 9    | The initial assessment of the patient to determine the biological, psychological, and social factors affecting the patient's physical health and any treatment problems. |
| 9 6 1 5 0    | A re-assessment of the patient to evaluate the patient's condition and determine the need for further treatment. A re-assessment may be performed by a clinician other than the one who conducted the patient's initial assessment. |
| 96152 | The intervention service provided to an individual to modify the psychological, behavioral, cognitive, and social factors affecting the patient's physical health and well being. Examples include increasing the patient's awareness about his or her disease and using cognitive and behavioral approaches to initiate physician prescribed diet and exercise regimens. |
| 96153 | The intervention service provided to a group. An example is a smoking cessation program that includes educational information, cognitive-behavioral treatment and social support. Group sessions typically last for 90 minutes and involve 8 to 10 patients. |
| 96154 | The intervention service provided to a family with the patient present. For example, a psychologist could use relaxation techniques with both a diabetic child and his or her parents to reduce the child's fear of receiving injections and the parents' tension when administering the injections. |
It is scientific fact that when a low level voltage and micro-current pulse is applied to the body osmosis, enzyme activity, and healing are increased. The SCIO will let the patient’s body electric autofocus a harmonic pulse to maximize this effect. This current applied to the cranium has been shown to stimulate the learning process and increase memory retention, and learning. There is published research on these therapies. The new world of energetic medicine can help you to learn twice as much in half the time comfortably and easily.

If you need more information on the SCIO and purchase details please get in touch with us

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<tr>
<td>96155</td>
<td>The intervention service provided to a family without the patient present. An example would be working with parents and siblings to shape the diabetic child's behavior, such as praising successful diabetes management behaviors and ignoring disruptive tactics.</td>
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<tr>
<td>97112</td>
<td>Neuromuscular Re-education (procedure).</td>
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<tr>
<td>97535</td>
<td>Self care / home management</td>
</tr>
<tr>
<td>97750</td>
<td>EMG Scanning complete muscle testing for physical therapists.</td>
</tr>
<tr>
<td>99090</td>
<td>Analysis of information data stored in computers.</td>
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This decision memorandum addresses a request for a national coverage determination received from Neurotron. The service for which coverage is requested is electrodiagnostic sensory nerve conduction threshold (sNCT) to be used to diagnose sensory neuropathies, such as diabetic sensory neuropathies, uremic sensory neuropathies, and carpal tunnel syndrome. The memorandum serves four purposes: (1) gives a general overview of select measures to assess sensory nerve function; (2) reviews the history of Medicare's coverage policies regarding sensory nerve conduction threshold; (3) analyzes relevant scientific and clinical literature on the use of sensory nerve conduction threshold and its impact as a diagnostic device on patient management for patients with sensory neuropathies; and (4) delineates the reasoning for our intention to issue a noncoverage determination.

Clinical Background

The nervous system is composed of the brain, spinal cord, and peripheral nerves. One of the main functions of the nervous system is to collect sensory information. This information is then processed and interpreted in order to initiate appropriate responses throughout the body. A neuron is the basic structural unit of the nervous system. It is composed of a cell body and two types of processes, dendrites and axons. Neurons collect incoming (afferent) information through dendrites whereas axons conduct outgoing (efferent) signals away from the cell body. Nerve fibers are composed of bundles of axons held together by connective tissue.

Sensory nerves, which carry impulses from sensory receptors to the brain, are composed of one or more of the following three fibers: (1) small unmyelinated (C fibers) fibers conduct temperature and slow
pain; (2) small myelinated (A delta fibers) fibers conduct pressure, temperature, and fast pain; and (3) large myelinated (A beta fibers) fibers conduct cutaneous touch and pressure.

Evaluating the function of sensory nerves may be of clinical importance for individuals who suffer from metabolic, hereditary, or acquired disorders, as well as those who have experienced a traumatic injury. There are several methods of evaluating sensory nerve function. Such tests include: (1) nerve conduction studies (NCS); (2) sensory nerve biopsy; and (3) sensory nerve conduction threshold (sNCT). Of these, NCS is the most commonly used and widely-accepted diagnostic test.

**Why the SCIO?**

**The Body Electric and Energetic Medicine**

In the fifth grade we learned that our bodies are made of atoms. And atoms are made mostly of protons, neutrons and electrons. There are great spaces between these electrons and protons and other atoms. Here is a Hydrogen Atom.

In Hydrogen if the protons are like marbles, the electron is over a kilometer away the next atom’s electron is over 2 kilometers away, the next proton is over 4 kilometers away. So there is 99.9999999999999999% empty space. This space is filled with energetic fields.

In Hydrogen if the protons are like marbles, the electron is over a kilometer away the next atom’s electron is over 2 kilometers away, the next proton is over 4 kilometers away. So there is more than 99.9999999999999999% empty space. This space is filled with energetic fields.
Atoms are 99.999999999999% empty space and the empty space between atoms is just as or emptier 99.999999999999999999999999%. Electrons repel of course so the atoms with outer electrons repel each other. Why don't things pass right through things?

Things don't fall through other things because they are levitating on an energetic electrostatic fields, I am not kidding! When you sit on a chair, you are not really touching it. You see, every atom is surrounded by a shell of electrons. This electron cloud presents a rather negative face to the world. Remember that like charges repel each other. When two atoms approach each other, their electron shells push back at each other, despite the fact that each atom's net charge is 0. This is a very useful feature of nature. It makes our lives a lot easier.

Now the question you should be asking is, if atoms push away from each other, why doesn't the entire universe just blow away from itself? The answer is gravity of course and actually most atoms' quantum electron shells are not full. When two atoms come together and have empty spaces in their electron quantum shells, they will share electrons to fill in the spaces in both of their shells. Yes, the electrons really do go back and forth between atoms and they do so pretty fast. Outer Electrons tend to be kind of mobile, which is also a very nice feature of nature, since without it your walkman would not work or you would not be alive. It is the free electrons and protons in the body that allow life. Once both atoms' outer shells are full due to this electron sharing, they go back to their usual repulsive behavior. This, by the way, is how we get molecules, hormones, enzymes etc and the secret to understanding Chemistry, Biology, Medicine, Physiology etc. It's all about the electrons and protons, charged particles and vibration! How about a medical device to measure and correct electron disorders? We call it SCIO.

The electrons and atoms of our complex Fractal body obey quantum, QED, photonic, electro-magnetic-static laws. This is a mouthful so we abbreviate and since these are all energy let’s say ENERGETIC.

There is undeniably a body electric and there is indeed an Energetic Medicine. Only an presumptive fool would assume otherwise. There is pressure from the chemical companies and their vast wealth and pervasive influence to view the body as a set of chemicals. But these chemicals are all made of energetic fields and they obey energetic laws like quantum, electro-magnetic, static, quantum electro-dynamic photonic laws.

It is clear to see that no medical doctor or any scientist is fully aware of the real nature of what our bodies truly are. Few medical personnel even know what an electron is. Medicine has made the mistake of ignoring the body electric and frowning on energetic medicine. Traditional medicine invested its future into synthetic chemistry and we now all know that SINthetic chemicals cause side effects that the some of the public does not want. Doctors depend on their prescription pad, and some people are tired of it. Some People want to exercise their freedom of choice and use natural medicine with minimal risk, and safe forms of energetic medicine.

Most of the electrons in the human body are bond very tightly, but there are enough free electrons to permit the functions of life to occur. All functions of life involve electrons and photons. There are specific patterns of energetic interactions that are healthy and normal and disease states occur when there is an upset in the energetic stability.

Energetic medicine in the past has made several scientific mistakes. First the hand delivered point probe was too sensitive to operator control and it was too slow to measure the body electric’s changing
activity. The muscle testing was also found to be 100% under operator control in all tests and thus was not measuring the patient’s body but measuring the therapist’s intent. Many claims were not supported with research or with clinical evidence. There were many charlatans selling illegal even complete bogus fraudulent devices with exorbitant claims. Certain Russian devices and others were found to be completely deceptive shams and doctors have lost their license using them.

Recently the regulatory bodies have been mandated to make the energetic medicine people put up the evidence to support their claims. We at SCIO have done so. We now have a CE stamp of approval for our CE mark and this paper is about the claims we and you can make in print or elsewhere. Congratulations everyone, energetic medicine is saved. We have made the studies correctly, found the literature evidence, and compiled the dossier to support the claims we make. By surveying the world’s best literature on all electrical medical data we complied. And we made the CE evaluation to make our device legal for sale around the world.
There are about 100 trillion cells in the human body and another 50 trillion microorganisms in the gut. All of these cells are in communication with each other and the master regulator the Brain. The cells communicate via signals of

1. Electro-Magnetic Radiation EMR (that is Photons and only the photons touch things), this is mitogenic radiation and infrared body heat which also can transmit information
2. electro-magnetic-static free electrons, or free protons (electricity)
3. intra-cellular ionic charged particles, (sodium and potassium channel Pump of neurons)
4. extra-cellular ionic charged particle, osmosis regulation, water circulation
5. large molecular paramagnetic substance like enzymes and hormones
7. The vibrations or cycles of each of these transfers is the frequency of operation
There are about 100 trillion cells in the human body and another 50 trillion microorganisms in the gut. All of these cells are in communication with each other and the master regulator the Brain. The cells communicate via signals of
1. Electro-magnetic Radiation (that is Photons and only the photons touch things),
2. Electro-magnetic-static free electrons, (electricity)
3. Inter-cellular ionic charged particles, (sodium and potassium channel Pump of neurons)
4. Extra-cellular ionic charged particle, osmosis regulation
5. Large molecular paramagnetic substance like enzymes and hormones

Ease of flow of information is Health. Stressors deregulate the flow and produce DisEase
A Few Stress Related Diseases

1. Acid Peptic Disease
2. Alcoholism
3. Asthma
4. Fatigue
5. Tension Headache
6. Hypertension
7. Insomnia
8. Irritable Bowel Syndrome
9. Ischemic Heart Disease
10. Psychoneuroses
11. Sexual Dysfunction
12. Skin diseases like Psoriasis, Lichen planus, Urticaria, Pruritus, Neurodermatitis etc
13. o High Blood Pressure
   o Ischemic Heart Disease
   o Peptic Ulcer
   o Irritable Bowel Syndrome
   o Asthma
   o Tension Headache
- Psychoneuroses
- Fatigue
- Insomnia
- Sexual Dysfunction
- Alcoholism
- Smoking
- Skin Diseases like Psoriasis, Urticaria, Neurodermatitis, Pruritus etc
The SCIO device can use the Trivector and Cybernetic Loop to rectify aberrant and disharmonious energy patterns in the body. This has profound effects on all body functions but affects the corpus callosum most intensely.

This means that the ability of the conscious verbal mind to relate to the subconscious is increased with the rectification process. The patient will probably not feel the effect. There will always be a positive effect. If there is a negative effect, it is because there is shielded or covert feelings or memories in the subconscious. These will cause disease if left untreated. A simple release may solve the problem.

The changes include:

1. Activate the innate intelligence to balance the body energies. This is the basic principle of chiropractic, acupuncture, and osteopathy medicine.

2. There is an easier exchange of energy and information from right brain to left brain via the corpus callosum. The corpus callosum is the largest energy form in the body and the rectification process has profound effects on stabilizing it, so it dramatically reduces switching phenomena.

3. The SCIO thereby increases the ability of the conscious to interface with the unconscious. This allows greater knowledge of self and of the higher self.

4. There is a greater memory access, a more true access of memory without emotional clouding.

5. There is a greater flexibility of connective tissue, allowing for more resilience.

6. There is a greater oxygenation and hydration ability of the body.

7. There is a smoother muscle control.

8. There is a general increase in well being that the conscious mind is so often unable to perceive. And thus there are thousands of subtle improvements to be found.
In Fact all disease is associated with or aggravated by stress. We now know that the electro-stress is increasing. The SCIO balances the body to better deal with Electro Smoke or Electro-Stress. See electro smoke paper.
Ease of flow of information is health. Stressors deregulate the flow and produce Dis-Ease, Dys-Ease disease. Disease is problems with the flow of health. See the causes of disease in the IMUNE Literature.

The Brain receives Photonic, Electrical, and Chemical information from all of the cells of the body, to regulate all of the body processes.

With the DNA of 100 trillion (100,000,000,000,000) cells sending information to all of the Brain, it is an overwhelming task of the Body Electric.

There are over 100 billion neurons in the Brain.

There are approximately 10,000 cellular Operations Happening every second.

This means there is $10^{18}$ bits of information going to the brain every second.

But the Reticular Activating System (RAS Word Brain) can only handle 1 million bits of Data a second or it is overloaded.

So the word area is getting one percent of one percent of one percent of one percent of one percent of one percent of one percent of one percent of one percent of one percent of one percent of one percent of one percent of one percent of one percent of one percent of the information of life. We need to measure the body electric to determine health.

Verbal lack of symptoms is inadequate. You can be really sick and not know it verbally. But your body electric knows all of the processes right down to the electron.
The SCIO measure the Body Electric variables of voltage, amperage, resistance, hydration, oxidation, Ph and the oscillations of each of the electrical factors in the body. These oscillations make up some of the standard biofeedback measures.

The SCIO can measure the Brain wave (EEG), heart electric (ECG), muscles (EMG), Skin Resistance (GSR) and measure global and quadrant body voltage, amperage, resistance, hydration, oxidation, and Ph. EEG, EMG, ECG all involve oscillations. GSR or skin resistance does not involve oscillation. Resistance is measured without regular patterns of oscillation. This is one of the failures of the Voll and point probe devices.

The SCIO can treat Pain (MENS), Trauma (EWH), Emotions (MCES), and Reactivity (TVEP)

Research has shown that when you apply an electrical impulses of a certain nature to tissue you can electrically treat pain, increase osmosis, speed up healing, measure reactivity, correct brain wave, treat emotional disturbances like addiction insomnia, anxiety, increase intellectual thinking and help learning disabilities. This and many more is shown in the literature and registered with the FDA as treatment devices.
All interaction is voltammetric, even the neurotransmitters act in voltammetric fashion. The CNS sends out electro-chemical, and electro-magnetic pulses to the body. The PNS has motor and sensory data, the ANS has regulation of life, homeostasis, metabolism, reproduction, immunity, digestion etc.

Most of the CNS should be nonverbal, subtle, and beneath verbal awareness.

The CNS then assesses the feedback and then alters its behavior to adapt to the CNS needs. Reducing stress allows the system to work more efficiently.

The CNS sensory feedback comes to the base of the brain stem where it is filtered by the Reticular Formation. The 100 trillion cells of the body send copious amounts of info to the CNS. The Reticular Formation lets only a small amount go to the voluntary word area of the brain in the left hemisphere, the rest to the nonverbal areas. The verbal areas would be over whelmed with homeostatsis information.
When these therapies listed above are coupled with a cybernetic feedback loop where we can automatically adjust the pulses in strength, duration, speed, or wave form, we get a superior technology. The electrophysiological feedback Xroid then results. A technology registered around the world for over two decades. Safe and effective energetic medicine now available.

With a Cybernetic BioFeedBack Loop of Measure, Treat, Re-measure, Retreat the SCIO can Repair the Body Electric. With Modern Electro-Auto-Focused Feedback the SCIO stimulates Osmosis, Healing, Thinking, and Nerve and Body Electric regulation.
measures & treats

Volts and Oscillations (EMG, EEG)
Amps and Oscillations (ECG)
Resistance (GSR)
Hydration
Oxidation (Redox potential)
Ph acid vs alkalinity
Reactivity evoked potential to voltammetric fields of substances (TVEP) over 228,000 measures a second of these energetic factors

Brain wave and emotions with (MCES)
Pain with (MENS) (TENS)
Trauma or wounds (EWH)
Electro Weakness Ph, Redox disorder (VARHOPE Correction)
Trickle charge the body electric

All designed to detect + reduce Electro-stress and Balance the Body Electric Automatically

If you need more information on the SCIO and purchase details please get in touch with us
Maitreya Kft.
tel: +3613036043
web: www.qxsubspace.com
e-mail: info@qxsubspace.com
Manage Pain with SCIO Biofeedback

Using AutoFocused Cybernetic Technology
The SCIO helps you to treat the Pain while you get to the cause of the Pain. Pain is not the enemy. The Stress, the Toxicity, the Muscle spasm the Injury is the enemy, and SCIO helps you to find and correct it.

The SCIO electrically knows which tissue is healthy, inflamed, or degenerate. It autofocuses Therapy.

Healthy tissue
Damaged tissue
Necrotic cell

Normal blood vessel
Damaged blood vessel

The SCIO stimulates the Electrical Healing of the Injury by increasing osmosis, electrical Ph balance, oxidation hydration to speed up recovery.

Everything in the Body has an Electrical Nature. The SCIO acts to balance and auto focus recovery for ease of use and speed up recovery time, tested, safe, and effective.
SOFT TISSUE INJURY

Treat with SCIO
Healthy membrane potential and adequate body voltage makes all of the functions of the cell work better.

Low Body Voltage leads to weak membrane potential, weak osmosis, trapped toxins, premature aging, and increased susceptibility to virus.

Factors that influence the body voltage and membrane potential are fatty acids in the cell membrane, minerals, especially salts, hydration water, oxygenation, stress, toxins and lifestyle.

The SCIO has been proven in tests to increase the electrical potential of the body. Increased cellular membrane potential makes osmosis increase, which increases detoxification, nutrient transfer and absorption, hydration, oxidation, and all cellular functions in general.

Charging the Human Battery

If you need more information on the SCIO and purchase details please get in touch with us:

Maitreya Kft.
tel: +3613036043 | web: www.qxsubspace.com | e-mail: info@qxsubspace.com
Treat Attention Deficit Disorder + ADHD with SCIO for non-drug relief of insomnia, rage, clinical depression, general addiction

The SCIO has a two decade history of safety, efficacy, and revolutionary challenges to the dominance of the drug companies, but the science of the body electric and Neuro-Electro-Physiological-Xrroid Biofeedback has come of age.
Increase Awareness
AutoFocus
ReCharge
the Body
Electric with SCIO

The SCIO sends a signal to the client

The CNS of the client is guided into safe gentle Stress Reduction and Muscular ReEd

The client reacts and sends info to the SCIO, the SCIO reacts
Leonardo Da Vinci was a cross dresser with man and woman characteristics of beauty, grace, science and art, He is an example of eccentricities in Genius. The male and female mind when combined and set free can see truth and see reality where more rigid minds are blind.

It was Genius to take Behavior Medicine, Life Style, Electro-Acupuncture, Homeopathy, Herbal Medicine, Homotoxicology, Blood Analysis, and all of Natural Medicine and combine it all in one Energetic Medicine device. Theorize it, Research it, Build it, Register it and do clinical evaluation of it for the last 30 years. True Genius, perseverance, steadfast dedication, vision, and enthusiasm.
There is more published research in peer reviewed medical journals on the SCIO than any other such device in history. There have been over 30,000 sold worldwide. Now how does a system like this get registered researched and have a history for over 20 years without you knowing? Easy the competitors do not want you to know about it, so they lie and make up slander and liable about the developer to deter you. They try to distract you with stories about the genius behind the device rather than talk about the device itself. Slander lies and innuendos about the developer are used to keep you unaware of the actions of the SCIO.

The drug companies got angry when I proved that the SINthetic medications are incompatible with the human. We all know about the side effects and nobody trusts the drug companies anymore. The muscle testers and the point probe people got angry when I proved that they were not measuring the patient, but they controlled the result with changes in pressure on a muscle and speed of delivery of the point
probe. They all made up lies about me and got the regulators to attack me. This was then used to stop doctors from listening to the truth. Stop you from looking into the SCIO.

There are conferences every year on alternative medicine. They plead for science and scientific studies. We have over a hundred, but we are never asked to come to deliver a paper. One man said we cannot ask Nelson to come because he spoils our party. He tells us what the law is, and he points out that we do not comply with the law. He points out what real science is, and how many of our devices are very unscientific. His devices use science and all comply with laws and regulations and if we invite him to speak we can’t sell our outlaw devices, so he spoils our party. So we don’t invite him.

Energetic medicine has become more of a struggle to sell devices than a medical concern. Few of the companies can comply and they make outrageous claims. Few even understand the body electric at all. Now when companies are attacked by the authorities to prove everything the companies claim it is important for us to understand the body electric and not just make speculative anecdotal claims.

The CE mark and full outline of what our SCIO device does, the legal claims are at the end of this discussion. We have beaten back the regulatory wolves till the next round of whiny rumors from the sham competitors.

Now I am ready to help you get out the word on the SCIO and energetic medicine. Please let us organize some meetings with the experts and leading doctors in the field of natural medicine to let them see the new leading technology and the future of energetic medicine. Let us put the excuses of my eccentricities aside and meet to talk about truth and science not about rumors or lies. I am available for you to set a pace into the future of medicine.
ELECTRO-SENSE

Everything is made of atoms with electrical fields. Every cell is an electrical dynamo of energetic photonic, quantic electro-magnetic-static activity. The Angel researches the Electro-Sense of humans and the body electric to make a complete energetic medicine device to help save the world, the EPFX / SCIO.

We can take the QQC Voltammetric patterns of different vitamins, homeopathics, nosodes, sarcodes, allersodes. Then amplify them over 10 million times and send them into the body as a safe micro current stimulation. Using a recognized proven scientific method of electro analytical modern chemistry “Transcutaneous Voltammetric Evoked Potential” the biofeedback device EPFX is for over two decades registered around the world as medically safe effective and drugless with no side effects.

And this is the reason the powerful Drug Co. hate and fear the messenger Angel, Desire.

SHARK SENSES ELECTRICITY

by Mary Ann Badavi & Stephanie Parker

A shark’s ampullae of Lorenzini are able to feel electric currents at short ranges.

All living things emit a small electrical current, a shark can feel it from 0-8 Hz.

The electro sense in humans has evolved into the Olfaction shape detection sense. Voltammetric shape readings of various homeopathics are used to measure the Electro-Physiological-Reactivity (EPR) of patients.

Sincerely Desire’ Dubounet

These are just some of the certificates we need to make and sell a medical device in Europe.
APPROVAL
EC Directive 93/42/EEC; Annex II, Article 3
Full Quality Assurance System
Medical Devices

Registration No.: M23 69240068 0001
Report No.: 28208466 001

Manufacturer: MAITREYA Hungary Ltd.
Kálvária tér 2.
1089 Budapest
Hungary

Scope: Design/development and manufacturing of Universal
Electrophysiological Biofeedback System
Product: SCIO

Date of expiry: 2015-02-22

The Notified Body hereby authorizes the quality management system established and applied by the
company mentioned above. The requirements of Annex II, Article 3 of the directive have been met.
This approval is subject to periodic surveillance, defined by Annex II, Article 5 of the aforementioned
EC Directive, and can be used by the company with the manufacturer's declaration of conformity.

Budapest, 2010-02-23

MEEI Kft. – member of TÜV Rheinland Group – H-1132 Budapest, Váci út 48/A-B

Notified under No. 1007 to the EC Commission.

The CE marking may be used if all relevant and effective EC Directives are complied with.
Certificate

Hungarian Institute for Testing and Certification of Electrical Equipment Ltd (MEEI Kft.)

hereby certifies that

MAITREYA Hungary Ltd.
Kálvária tér 2.
1089 Budapest
Hungary

Place of the audit: H-1089, BUDAPEST Kálvária tér 2.

established and applies a quality system for the following scope:

Design/development, manufacturing, distribution and servicing of
Universal Electrophysiological Biofeedback System

Compliance with the requirements of

EN ISO 9001:2008

standard has been proven.
This certification is subject to regular surveillance audits.

Registration no.: MQ 692400700001
Audit report no.: 28208466 001
Validity of certificate: from 2010.02.23 to 2013.02.22

Budapest, 2010.02.23

Zoltán Ambrus MD
certifier

MEEI Kft. – TÜV Rheinland group – H-1132 Budapest, Váci út 4B/a-b
Tel.: (+36) 1 2888-456 Fax: (+36) 1 2888-409 e-mail: meei@bu.tuv.com http://www.tuv.com/meei
Certificate
The Certification Body of
MEEI Kft. – Member of TÜV Rheinland Group
hereby certifies that the company
MAITREYA Hungary Ltd.
Kálvária tér 2.
1089 Budapest
Hungary
has established and applies a quality management system for medical devices
for the following scope:
Design/development, manufacturing, distribution and
servicing of Universal Electrophysiological Biofeedback
System

Proof has been furnished that the requirements specified in
are fulfilled. The quality management system is subject to periodic surveillance.

Certification Registration No.: M28 69240096 0001
An audit was performed. Report No.: 28208466 001
This certificate is valid until: 2015-02-22

Budapest, 2010-02-23

Zoltán Ambrus MD

MEEI Kft. – member of TÜV Rheinland Group – H-1132 Budapest, Váci út 48/A-B
The SCIO Universal Electrophysiological Biofeedback System can safely measure over the skin (transcutaneous) skin electro-potential down to the micro-volt range. Virtual and mathematical calculations of the attained data can provide CNS (Central Nervous System) biofeedback data, so as to include simple EEG [electroencephalography], 3-pole ECG [simple stress electrocardiography], global transcutaneous EMG [electromyography].

The system can measure the transcutaneous skin resistance by application of a medical safe micro-current voltammetric pulse, so as to measure GSR [galvanic skin response] and TVEP [transcutaneous voltammetric evoked potential].

The system is designed for the detection of stress and reduction of stress through CNS biofeedback data or stress lifestyle questionnaires. The stress and lifestyle questionnaires provide educational feedback through library referenced functions. And the device can be used for the treatment of muscular re-education from injury, muscle weakness, sport muscular enhancement or various dystonia. The applied voltammetric pulse can be used to detect and affect in established modalities such as pain (TENS [transcutaneous electro nerve stimulation]), trauma/wound healing, charge stability imbalance, redox potential and electrophysiological reactivity.

The device after 20 years of use is quality tested, clinically evaluated and scientifically validated as safe and effective.
Niels Bohr
Albert Einstein
Desire' Dubounet
the debate goes on
I express my Outrage by being Outrageous

I am Outraged at Natural Medicine’s Gullibility + Math-Phobia

I am Outraged at Evidence based medicine’s Profit over People

If You are Not also Outraged then Think, maybe it is Time

I am Outraged + I am tired of being Hated by Both sides
Overview on Billing, Coding, and Reimbursement

Sebastian “Seb” Striefel, PhD

Abstract: The author introduces a special section of articles on billing, coding and reimbursement issues in clinical practice. The author examines the impact of managed care on billing and coding practices. Ethical practice places priority on the needs of the client, above those of the provider, and regardless of reimbursement.

Managed Care (MC) has changed the world of healthcare dramatically and many providers would say that the overall impact has been negative. The courts seem to agree because Managed Care Organizations are slowly being held more accountable for the decisions that they make. Yet, there are two sides to every issue. Durfee (1997) has argued that the old “fee for service” approach to reimbursement was subject to over-utilization because there was no incentive to quickly improve the health care status of patients. Of course, others argue that capitation and other MC approaches result in underutilization of services and even harm patients. The arguments go on and on. Durfee (1997) also stated that “good” physicians, and one could add “good” providers, function well regardless of the system of reimbursement and “bad” providers do poorly regardless of the reimbursement mode. Suffice it to say, that “first and foremost are the best interests of the patient” and that does not depend on the method or reimbursement (Durfee, 1997; Barnhill, 1998; Striefel, 1995). The needs of the client should guide providers in everything they do or don’t do in their practice activities. In the conflicts created by the MC environment, the needs of the client should take precedence over those of providers (Barnhill, 1998).

This issue of Biofeedback includes a number of articles that discuss various issues and perspectives related to billing, coding, and reimbursement. The articles were part of a symposium presented at the 34th Annual Association for Applied Psychophysiology and Biofeedback Conference in Jacksonville, Florida, March 28, 2003. The symposium was organized by Robert Whitehouse and Sebastian Striefel served as the chair and discussant for the session. Many attendees requested that the information presented be made available in written form. As such, the articles in a slightly modified form are being presented herein. The intent of this series of articles is to clarify various issues related to billing, coding, and reimbursement and hopefully that will help readers be more effective and efficient in coding and billing and in being reimbursed for the services that they provide.

References


Does AAPB have your e-mail address?

- e-mail communications enable AAPB to communicate better with members.
- E-mail communications also save AAPB money, and enable the Association to use your dues money for other critical activities.

Please send your e-mail address today to the following address:
aapb@resourcenter.com
Abstract: Considerable confusion seems to exist concerning how to go about correctly and ethically billing, coding, and getting reimbursed for biofeedback and related services. This article discusses some of the commonly used billing codes and the limitations thereof. Practitioners need to establish good working relationships with third-party payer personnel so that they can learn the rules and regulations of each payer concerning coding, billing, and reimbursement. Failure to know and abide by state and federal laws, and the rules and regulations of third-party payers can result in severe penalties in the form of fines and/or jail time, damage to the practitioner’s reputation, loss of referrals, and distrust by patients. Learn to code, bill, and seek reimbursement within legal and ethical guidelines.

Introduction

Considerable confusion seems to exist among practitioners about how, within an ethical and legal framework, to correctly code and bill for biofeedback and related services to maximize the probability of being reimbursed. This seems to be particularly true in areas like EEG biofeedback, surface EMG (sEMG), and sometimes also with incontinence work. One intent of this series of papers is to help provide some useful information on what is working for at least some practitioners.

Some other related but complex issues follow: 1) What can one do about denials? 2) When can and can’t you bill the patient when the insurance company will not pay? 3) How do you go about getting an authorization for service from an insurance company? 4) What is “down coding”? 5) How are relative values determined and how can they be changed? 6) How does a provider go about dealing with Medicare? 7) How can providers avoid engaging in fraudulent behavior? 8) What are the rules about using or not using multiple codes within a session? 9) Who can use the new Health and Behavior Assessment/Intervention codes, 96150-96155? 10) When is it appropriate to use a biofeedback versus a psychotherapy code? 11) How can providers go about influencing insurance companies to reimburse for biofeedback and related services? 12) How do certification and licensure influence what is happening or not happening? 13) What kind of research support is needed currently to enhance the status and recognition of biofeedback and applied psychophysiology? Clearly each of these issues is important, but it will not be possible to address all of them in this paper or even in this series of papers. For more information see Striefel, Whitehouse, and Schwartz (2003) and the specific rules and regulations of the various third-party payers.

AAPB is conducting a survey on coding, billing, and reimbursement issues. The survey is available online. If you have not filled out a survey contact the AAPB at aapb@resourcecenter.com for a copy. The survey will help collect the kind of information needed so that AAPB can provide appropriate input to the American Medical Association’s (AMA) coding committee. This is accomplished by sharing information with a representative of the American Psychological Association who represents us on the AMA’s coding committee. At present that person is Antonio Puente, PhD.

Diversity Adds to Confusion

The membership of AAPB is very diverse and represents individuals from at least 19 disciplines. This diversity is both a strength and a challenge in dealing with insurance companies and in terms of who can do what. Biofeedback practitioners have an identity or recognition problem that adds to the coding, billing, and reimbursement confusion. Insurance companies often think that everyone who does relaxation training, including biofeedback for that purpose, is or should be a psychologist, and they often do not know who else, when, or if to reimburse. The public often does not know what biofeedback is and often confuses biofeedback with “biorhythms” or meditation, or see it as “just relaxation.”. Others are confused about whether biofeedback is a profession or a modality, and whether it is part of “mainstream health care” or falls under Complimentary and Alternative Medicine (CAM). In any case, they want to see the outcome research data. In addition, there are certain Current Procedure Treatment (CPT) codes that are very useful and appropriate when used by members of some disciplines, but which are inappropriate for use by other disciplines. In part, the appropriateness of using particular CPT codes is governed by the rules and regula-
tions of specific third-party payers, and in part, it is governed by the licensing laws of individual states. For example, some states have licensing laws that define the practice of specific disciplines to include procedures and interventions like biofeedback and psychotherapy, and include all assessments of and treatment of mental and emotional problems. In such states the specified interventions are the domain of practitioners licensed in those specific disciplines, those exempted by the law (e.g., clergy), or those supervised by such licensed professionals. Utah's psychology licensing law has such provisions and makes exceptions for other licensed professionals whose own licensing law allows them to provide such services as psychotherapy or biofeedback. Other individuals are prohibited from providing such interventions. Texas law goes so far as to prohibit licensed professionals from even supervising unlicensed practitioners in the provision of certain services, with of course some exceptions. For more information on this topic see Striefel (2003, 2001). The bottom line is that it is very important to establish and maintain a good working relationship with third-party payers so that one can learn what and how to work effectively and efficiently with each provider within their coding, billing, and reimbursement structure.

CPT Codes

The CPT codes were originally developed for obtaining reimbursement from Medicaid and Medicare. Later, other insurance companies started to use the codes, but they do not have to, and they do not all use them in the same way so this also adds to practitioner confusion. The AMA's coding committee may have added to the confusion with codes 90875/90876 and 90901 because they seem to create a mind-body split. The 90875/90876 codes include biofeedback and psychotherapy and are appropriately used by those who can legally provide psychological or mental health services within the state in which they practice. Using these codes when not legally allowed to do psychotherapy or when psychotherapy is not an appropriate part of a client's treatment is illegal and unethical. Of course these codes also imply that biofeedback is also a part of the client's treatment. Generally, 90901 was created for all those others who can legally provide biofeedback, but where psychotherapy is not provided (a mind-body split).

It is important for practitioners to remember that the CPT codes do not make any distinction about whether the provider of services must be licensed or not. The decision about who can legally provide service is decided initially by individual state licensing laws. Further restrictions depend on the policies of third-party payers. For example, a state may allow an unlicensed provider to provide biofeedback services, but Medicare rules in that state may restrict such treatment payments to licensed personnel. For a licensed or unlicensed provider to bill Medicare for services provided by an unlicensed provider in such a state would be fraud. Likewise, when a state restricts the provision of biofeedback services to someone licensed in specific health care disciplines; as such it would be illegal for someone to provide such services if not licensed appropriately even though a third-party payer might pay for services provided by unlicensed personnel.

Practitioners should know the laws of their individual state in reference to who is and who is not legally allowed to provide biofeedback, psychotherapy, and other health care related services. Laws in some states restrict the provision of some health care services such as biofeedback and psychotherapy to members of specific disciplines and some do, and some do not, allow licensed practitioners to supervise unlicensed personnel in the provision of these restricted services. What do the relevant laws in your state say governing the provision of biofeedback, psychotherapy, and related services? It is critical that you know what the provisions of your state laws are. Colorado has licensing laws governing the practice of specific disciplines like psychology, social work, nursing, and physical therapy, but it allows unlicensed practitioners to register themselves as unlicensed psychotherapists and to provide such services as biofeedback.

AAPB has had some successes or victories in the CPT code arena. John Perry, PhD working with AAPB's legislative and insurance committees helped in getting Medicare to pay for incontinence biofeedback. In addition, Antonio Puente, PhD, was instrumental in helping to create the new CPT Health and Behavior codes (96150-96155). It does take advocacy on the part of practitioners in order to change CPT codes and get reimbursement for biofeedback and related services. Are you doing your share of advocacy work? Bob Whitehouse is the current chair of the insurance committee and can be reached in the following ways:

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The co-chair of the insurance committee is Ronald Rosenthal, Ph.D., of Florida, and he can be reached best via e-mail at: RRosent710@aol.com

The AMA's coding committee gives this definition of biofeedback:

**BIOFEEDBACK** is the process of detecting information about a patient's biological functions, e.g., heart rate, breathing rate, skin temperature, and amount of muscle tension, picked up by surface electrodes (sensors) and electronically amplified to provide feedback, usually in the form of an audio-tape and/or visual read-out to the patient. Biofeedback training uses the information that has been monitored from the sensors attached to a muscle on the skin's surface, or to the skin only for thermal or other readings. With the help of a trained clinician, the patient can learn how to make voluntary changes in those biological functions and bring them under control.

The definition includes all kinds of biological functions and the feeding back or training of individuals using monitors, i.e., doing biofeedback the way it would be done in a clinical setting.
CPT Codes
The CPT codes concerning biofeedback and their codes in the CPT Manual are:

Biofeedback
90901 This code applies to biofeedback training using any modality.
90911 This code applies to biofeedback training of the perineal muscles and the/or the anorectal or urethral sphincter. It includes EMG biofeedback, and/or manometry.

Other Psychiatric Services or Procedures
90875 This code applies to individual psychophysiological therapy that incorporates biofeedback training by any modality with psychotherapy (e.g., insight oriented, behavior modifying or supportive psychotherapy). It must be face-to-face with the patient and session length is approximately 20-30 minutes.
90876 The definition for this code is the same as for 90875, but the session length is approximately 45-50 minutes in duration.

The only difference between the 90875 and 90876 is the length of the treatment session, i.e., 20-30 minutes versus 45-50 minutes. Anyone who can legally provide psychological/mental health services within their state can use the 90875 or 90876 codes. Of course not every insurance company pays for this service or they may pay for it within one client coverage policy contract and not within another, adding to the coding, billing, and reimbursement confusion. The code for psychotherapy without biofeedback is discussed later under the section on Other Codes.

Health and Behavior Assessment/Intervention Codes
The new CPT Health and Behavior Assessment/Intervention codes were basically developed to recognize the work of professionals, like psychologists, with physical health problems. Their use does not require that there be a psychological diagnosis. Prior to their creation, psychological interventions could not be provided to those with medical or physical problems unless there was a psychological diagnosis to help verify “medical necessity.”

These new codes, 96150-96155, are used for health and behavior assessments and interventions where it is not necessary to make a psychological diagnosis (e.g., DSM IV). Of course one must engage in the activities that fit the definition for these specific codes. The health and behavior codes follow.

90150 This code applies to health and behavior assessment (e.g., health-focused clinical interviews, behavioral observations, psychophysiological monitoring, health-oriented questionnaires). A practitioner can bill for each 15 minutes of face-to-face assessment with the patient. This code is used for the initial assessment.
90151 This code is used for re-assessment(s).
90152 This code applies to health and behavior interventions. Each 15 minutes of face-to-face intervention with an individual client is billable.
90153 This code applies to group treatment/intervention (2 or more patients).
90154 This code applies to family treatment/intervention (with the patient present).
90155 This code applies to family treatment/intervention (without the patient present).

Other Codes That Are Potentially Useable
Some other codes that might be used if approved by the third-party payer follow:
94010 This code applies to spirometry and includes a graphic record, total timed vital capacity, and expiratory flow rate measurement(s), with or without maximal voluntary ventilation.
94400 This code applies to the breathing response to CO2 (includes the CO2 response curve).
96002 This code applies to dynamic surface electromyography during walking or other functional activities for 1-12 muscles.
95957 This code applies to digital analysis of the electroencephalogram (EEG) (e.g., for epileptic spike analysis). (Some practitioners are using this code for QEEGs because it consists of a digital analysis of the EEG).
90806 This is the code for individual psychotherapy, insight oriented, behavior modifying and/or supportive psychotherapy in an office or outpatient facility for sessions lasting approximately 45-50 minutes, face-to-face with the patient. (Note: some insurance companies will allow biofeedback to be used as a psychological modality if part of a psychotherapy treatment and provided by a licensed mental health provider, but not if provided by an unlicensed provider. Do not try to deceive the insurance company about what you are doing by using this code when only biofeedback services are provided. Doing so would be fraud).

Other Codes
There are some new Complimentary and Alternative Medicine (CAM) codes that use five letters of the alphabet instead of numbers. The code CDAAP applies to biofeedback, counseling, mental health services and practice specialties, e.g., assisting the client to modify body functions using feedback from biofeedback instruments. The codes were developed by Alternative Link for over 4000 procedures that describe the patient encounter with nursing, CAM, and indigenous medical services. Laws governing providers of such services differ by state and are available at 877-621-LINK or www.alternativelink.com. At present it is not clear what role these codes will play in the coding, billing, and reimbursement of services to clients.

An IDC-9-CM code was developed by the World Health Organization (WHO) for treating the psychogenic aspects of a medical disorder using biofeedback. It is 9439 - other individual psychotherapy (biofeedback).

It should be remembered that managed care considers insurees to be customers and it uses a business code of ethics that empha-
sizes making money. This focus often appears to be totally opposite that of health care practitioners, such as those providing biofeedback, where the focus is on meeting the specific current needs of the client/patient.

**Billing Choices**

Remaining current on coding, billing, and reimbursement is an ongoing learning process that requires practitioners to make many choices as previously discussed. It is important to know what the correct CPT code is for the services that are provided, but it is just as important, if not more important, to know what the third-party payer's rules and regulations are that govern coding, billing, and reimbursement based on the specific insurance coverage of a client. Failure to know and abide by the rules can have dire consequences. It is easier to call for the third party information.

In Utah, a psychologist was working with both the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS, the insurance coverage for military personnel and their families) and Medicaid. He hired several unlicensed individuals with degrees in social work and psychology to provide clients with treatment/therapy. He was charged with 66 counts of mail fraud and related offenses, in what was described in the newspaper, as an alleged billing scheme to defraud government subsidized health-care programs. In at least Utah, CHAMPUS and Medicaid will reimburse only for therapy provided by a licensed mental health professional. To not follow the government's rules was considered to be fraud. Such fraud is punishable by large fines and even jail time. In Houston, Texas, a physician was actually sentenced to a prison term for violating Medicare's billing and reimbursement rules. Think about the damage to the practitioner's reputation, the emotional turmoil, and the damage to the trust with referral sources and clients.

Practitioners should take coding issues very seriously and know the rules of third-party payers. Third-party payers are placing greater emphasis on detecting and punishing those who engage in fraud and the penalties can be severe. Seek the assistance you need to ensure that all of your coding, billing, and reimbursement activities are legal and ethical.

**Whitehouse’s Seven Rules of Thumb for Billing And Coding**

Bob Whitehouse’s seven rules of thumb for billing and coding follow:

1. Decide who is responsible for obtaining the information about the client's insurance coverage. Practitioners often assume that the client is responsible for obtaining the insurance information and for dealing with the third-party payer. In recent years there have been successful lawsuits against practitioners that have made clear that during the informed consent process the practitioner should clarify for the client what the limitations are that are imposed by his or her insurance coverage, e.g., what services are or are not covered, number of sessions, etc. It is important for practitioners to reconsider what they do or don't do during the informed consent process about insurance imposed limitations.

2. Decide who is responsible for the bill at the onset of services. Have an agreement with the client about this issue.

3. Determine what the appropriate CPT code is for use in billing based on the client's diagnosis and the services provided. Determine the appropriate rate of reimbursement, co-pay, and provider requirements. Do not make uninformed assumptions. Instead, form a working relationship with the appropriate third-party payer personnel to be sure you have the information needed to comply with their rules and regulations.

4. Be sure that your clients are informed about your “no show and late cancellation policy.” Do not violate any contract you have with a third-party payer that prohibits you from billing for “no shows” or other violations of your policies. Know what is in any agreement that you sign with a third-party payer before you sign to be sure you can and are willing to abide by the agreement. The courts have repeatedly ruled that you are responsible for abiding by the contracts that you sign, but you are also responsible for meeting your professional responsibilities to clients.

5. Keep both your clients and the third-party payer informed concerning your legal and ethical obligations, your fee structure, and your responsibilities, including your ethical responsibility to advocate for your clients if you disagree with a third-party payer decision concerning number of sessions, etc. Carefully document all of your advocacy efforts on behalf of a client in their file and be sure to keep them informed about your efforts.

6. Do your best to make sure that the diagnosis you assign to a client's problem is accurate, that the billing code used is accurate and appropriate, and do include the amount of time spent and the fee charged for services in your billing statement. Be sure you are in compliance with the Health Insurance Portability and Accountability Act requirements.

7. Avoid engaging in any fraudulent behavior such as over or under diagnosing, providing one service but using a different code because the insurance company will pay for that code, inappropriately using dual billing codes, etc.

**References**


BILLING, CODING AND REIMBURSEMENT ISSUES IN CLINICAL PRACTICE

Ethics in Billing, Coding, and Reimbursement

Sebastian “Seb” Striefel, PhD

Abstract: Billing, coding, and reimbursement raise a number of ethical and related issues, including: duty of care; best interests of the client; honesty and accuracy in assessment, diagnosis, treatment planning, billing, and coding; competence, compliance with the Health Insurance Portability and Accountability Act (HIPAA); confidentiality and record keeping; informed consent; conflict of interest; and termination and abandonment. Providers are consistently faced with dilemmas that pit their own economic and professional survival against the best interests of the client and the rules and regulations of managed care. Yet, providers are expected to remain and enhance their areas of competence including the ability to provide services that meet all existing ethical and legal guidelines.

Introduction

The ethical and legal “duties of care” of providers remain even if third-party payers won’t pay or authorize additional services (Murphy, 1998). See Striefel, 1997b; 1998; & 2003a; for more extensive information on duty of care. As providers we need to know what our duties of care are, ethically and legally, and let them guide our practice activities. Most important is the duty of “do no harm.” It often takes precedence over other duties of care. For every duty that a practitioner has, there is a concomitant right that the client has (Striefel, 1997a). Providers must be aware of and protect those rights (Striefel, 1997a; 2003b). Cummings (1998) in discussing the patient’s bill of rights (by the way, the new Health Insurance Portability and Accountability Act (HIPAA) gives patients many new rights) said that the “patient is entitled to relief from pain, anxiety, and depression in the shortest possible time and with the least intrusive intervention” (p. 58). Pratt, Berman, and Hurt (1998) agree with him. Do you? Cummings (1998) goes on to make the point that short-term treatments are a part of the MC environment and will be with us for a long time so we best learn how to work in and with MC and to do it effectively and efficiently using short-term treatments.

In addition to duties of care, this article discusses other topics related to coding, billing, reimbursement and MC in general. They are: 1. Assessment, diagnosis, and treatment; 2. Confidentiality and record keeping; 3. Informed consent; 4. Conflict of interest; 5. Termination and abandonment; and 6. “Incident to” care.

Assessment, Diagnosis, and Treatment

Honesty, trust, non-malfeasance, beneficence, justice, autonomy, and other fundamental moral and ethical principles are put to the test daily in MC environments. It is important not to lose sight of these important ethical principles and to get onto that “slippery slope” that leads to serious ethical and legal violations. It is easy to rationalize that “I’ll just fudge this diagnosis a little and then my patient can be reimbursed because his/her insurance will pay for that diagnosis.” Doing so can rapidly lead to an erosion of a provider’s moral and ethical values.

Barnhill (1998) stressed the importance of doing an honest and accurate diagnosis and being competent in doing so. Evidently many providers are on the slippery slope. He surveyed 92 clinicians and only 10% reported that they never modified a diagnosis or CPT code to help a client get reimbursed. Those surveyed reported over diagnosing, under diagnosing, or modifying a diagnosis or CPT code to something for which the third-party payer would reimburse. Only 12% said they never modified a diagnosis or CPT code to protect client confidentiality, or future employment or insurance prospects for clients.

One could argue that providers are faced with the ethical dilemma of deciding between doing what appears to be in the best interest of the client and being dishonest and engaging in fraud by falsifying a diagnosis or CPT code. Of course, it is never ethically or legally acceptable to engage in fraud so no dilemma should exist between those two issues. It is also possible that providers are changing the diagnosis or CPT code because doing so increases the probability that they will be reimbursed (even though many of them would deny that as their motivation). These percentages for changing a diagnosis or CPT code are scary. It is even more frightening to think that the changes are being made purely to maximize the probability of being reimbursed. Engaging in fraudulent behavior is never acceptable ethically or legally. If one engages in fraud the penalties are very severe for the individual, the reputation of the profession and similar providers, and it can destroy client trust and encourages the need for more accountability. Millions of dollars are being spent to detect fraudulent behavior, e.g., Managed Care Organizations.
to miss a progressive disease like a thyroid disorder, diabetes, cancer or a tumor, and this could result in harm to a client and problems for the provider (Nagy, 1998).

According to Cummings (1998) the five most common over diagnoses based on the records of hundreds of thousands of records are: 1. Multiple personality disorder (now called dissociative identity disorder), 2. Attention Deficit Hyperactivity Disorder, 3. Post Traumatic Stress Disorder, 4. Survival of incest, and 5. Depression. Can you accurately diagnose these conditions and or know when to refer a client with one of these potential problems to someone who can?

Confidentiality

If you haven’t completely done so yet, pay careful attention to the requirements of the HIPAA of 1996. It lays out a wide range of expectations for confidentiality or what therein is called “protected health information” (PHI). The provisions regarding PHI must be fully implemented by April 14, 2003. We are now past that date. HIPAA, even though it might technically not be binding on some providers (e.g., individual practitioners who do no electronic billing). Practically HIPAA will impact most if not all providers. A provider will not know if HIPAA is binding for him or her unless he or she is familiar with its provisions. HIPAA requires providers to have written policies and procedures for how they will protect clients’ PHI. They must also implement and monitor these policies and procedures, take action if a breach of confidentiality is detected and must document everything.

It is important to compare your policies and procedures for PHI against those of HIPAA, ethical expectations, and state law. If state law is more stringent it takes precedence. Take HIPAA very seriously since the penalties for violations can be very severe; besides you have an ethical obligation to do everything you can to protect confidential information.

Some other suggestions concerning confidentiality follow:

1. Know the requirements in MC agreements/contracts before signing them. If you sign the agreement, even if you disagree with some of the provisions therein, the courts often expect you to abide by those provisions; but they also expect you to meet your duties of care. For example, try to provide only a summary of treatment rather than complete contact notes, unless of course, required by the written agreement (Murphy, 1998). Pollack (1998) reported that providers often submitted more information than was required for purposes of URs. Murphy (1998) and Pollack (1998) report that providing more information than what is needed or required for the review process is a violation of confidentiality. HIPAA requirements expect providers to share PHI only to the degree necessary for the specific purpose at hand, although it appears that some of those requirements may already be changing.

2. Always get a specific signed release of information from a client before sharing information with a MCO (Murphy, 1998), i.e., getting the client’s informed consent to share information. The insurance billing form is often considered legally insufficient for sharing confidential information because of its lack of specificity on what information is needed for what purpose (Murphy, 1998). Cummings (1998) argues that those who pay the bill are entitled to the information needed to determine if everything is accurate, meets professional standards, and is within the scope contracted with the provider. He says that providers often use confidentiality as a red herring to hide incompetence in assessment, diagnosis, and treatment planning and implementation. Regardless of what the law requires or does not require, biofeedback providers are expected to maintain client confidentiality (AAPB, 2003; Striefel et al., 1999). Crosby reported that “because something is legal does not mean it’s ethical, and because something isn’t illegal doesn’t mean it’s ethical” (Smith, 2003, p. 18).

3. Know the limits of confidentiality based on the laws of the state in which you practice so you can obtain the client’s informed consent (Nagy, 1998). They often include:

(MCOs) now keep provider profiles to detect over and under diagnoses, length of treatment for specific conditions, procedure codes, etc. (Cummings, 1998). Profiles for hundreds of thousands of clients and providers are being compared and the number of providers being penalized is increasing. It appears important to make the following explicit statement, “Don’t engage in fraudulent behavior!”

The conflict between helping the patient and following the ethical, legal, and MC rules is always there. We need to follow the rules while striving to legislatively change those with which we disagree because they have the potential of harming patients. Cummings (1998) reported that over diagnosis is mushrooming because more serious diagnoses results in more treatment sessions being approved. This process can harm the client/patient and is not fair to the patient because the diagnosis is not honest or accurate and it goes into his or her file and there is no guarantee that the MCO will keep the information confidential. It is also fraud to use a procedure code that is reimbursable and then to provide a different service, e.g., to use the psychotherapy procedure code and provide only biofeedback services (Murphy, 1998).

By the way, Pollack (1998) reports that licensed professionals who serve as utilization reviewers (URs) for MCOs report that they are very concerned about the competence of some providers in being able to conduct appropriate assessments, make the correct diagnosis, and develop treatment plans. It is important to practice only in those areas where you have demonstrable competence based on education, training, and experience, unless appropriately supervised (AAPB, 2003; Striefel et al., 1999). It is important to continue one’s education and training and to get additional supervision and consultation to maintain and expand one’s areas of competence.

The most commonly missed diagnosis is chemical dependency (Cummings, 1998). Providers need to ask about chemical use as part of the intake procedure. If a client is injured because a provider missed a condition in the diagnostic process, he or she could be found negligent. For example, if a provider does not involve a physician when physical problems exist, it would be possible
pictures on China, AC Milan, San Antonio Spurs, Dennis Johnson

The first sport study with the Quantum Xroid technology was on members of the Cleveland Browns football team in 1988. The results were amazing and all of the participants went all Pro over the next five years. Having worked with the power lifting team of Hungary in 1991 they went from moderate to gold medal performance.

AC Milan bought some systems and their injury level dropped 91%. This was because the system can stimulate and accelerate healing of injured tissue. They asked for us to develop the device to sharpen the athletic skills of the clients. With this in mind we developed a way to sharpen coordination endurance and strength. AC Milan won the European championship the next two years. We worked with Dennis Johnson ex twice NBA MVP in the San Antonio Spurs system. The results were amazing.

The Chinese Olympic team had us do a study. Out of their 407 athletes in the 2008 Olympic Games, they assigned 150 of the sick, old, weak, and tired to us. The study was to see if we could repair injured tissue and get an athlete back onto the field. The results were astounding. Out of the hundred medals won by the Chinese our 30% of the injured performers won 33% of the medals. Our athletes were not supposed to win. And because of this Desire’ was awarded an honorary Gold medal.

Sports medicine has entered the energetic arena. There are those who want to win and they differ from those who want to conform.

Some of the best cyclists in the world have used the SCIO to win championships
a) when a client is a danger to self or others,
b) when you suspect abuse or neglect,
c) when the patient sues the provider,
d) when the client is court ordered into treatment,
e) when there is litigation where the client uses the condition they were treated for as part of his/her defense (e.g., workers compensation),
f) when a patient dies and her/his heirs think the provider has information needed to contest a will,
g) other, e.g., reporting of infectious diseases.

Protect client records from unauthorized access. This includes faxes, Emails, phone calls, etc. For example, HIPAA requires providers to verify that the fax is going to the right person and that the receiver be notified that the information is to be treated as PHI. All computerized PHI needs to be protected. One can use passwords and change them when staff leave the organization. One can lock up removable hard disc drives, encrypt files, make files “read only” to prevent unauthorized copying, store backup files in an appropriate external storage site, backup files regularly, etc.

**Informed Consent**

Clients are entitled to all of the information that a reasonable person would want in making decisions about treatment; prioritizing treatment goals; fees, billing, and collections; limits of confidentiality, insurance coverage and limitations, etc. The requirements for informed consent have expanded over time. Calfee (1998) reports that providers must inform clients about the limits of their insurance coverage so clients can make informed choices, e.g., if MC will only authorize six sessions and the client knows that, he or she can decide, in consultation with the provider, which symptom or problem to have treated. Nagy (1998) believes that clients should know what is covered, the number of sessions that are likely to be approved, the options that exist if the number of pre approved sessions have been used up, confidentiality issues, and the utilization review and case management process. Providers have been sued (usually MDs) when patients have not been informed about the range and limits of treatment covered by their insurance and the patient claims that he or she would have made different choices had he/she known (Nagy, 1998).

For example, do you inform clients about the risks associated with information that goes to a third-party payer? Do you tell clients about the risks to confidentiality associated with the use of technology, like computerized information, faxes, phones, etc., and how you try to protect client confidentiality (PHI)? HIPAA requires that how you deal with PHI to be given to clients in writing.

You need to advocate for clients, e.g., if you believe a patient needs more sessions of treatment you need to try to get the MCO to approve them. Failure to do so can lead to charges of abandonment. In this process it is important to have a paper trail of the efforts made, the responses received, and for the client to be aware of the efforts made. A good faith effort to get the needed treatment is needed to meet the expected duty of care. Meeting the duty of care may also mean providing treatment without getting paid for it, helping a client in need gain access from another less costly provider, and informing the client as to his/her options so that he/she can make informed choices.

Informed consent should be an ongoing process so a client knows and agrees to changes in treatment or the treatment approach, homework, including others in treatment (e.g., a spouse), and the risks associated with doing so, e.g., a temporary increase in anxiety or depression (Nagy, 1998).

**Conflicts of Interest**

It is important to disclose all conflict of interest issues that might impact clients or others and to make reasonable efforts to resolve them (Harding, 1997). For example, a client needs to be informed if a provider receives any financial incentives for limiting care so that the client can make reasonable choices. Advocating for a client in need when the pre approved sessions are used up can put a provider at risk of being not receiving future referrals from that MCO (Nagy, 1998; Pollack, 1998). Yet, the provider is ethically bound to advocate (Murphy, 1998). Failing to advocate could result in services falling below the minimal expected standard of care and/or in charges of abandonment. Learn how the MC system works, how to appeal decisions, have a good rationale and treatment plan to support your appeal for more sessions, ask a utilization reviewer to go to his or her supervisor to get more sessions approved, document it all, and keep the client informed (Nagy, 1998; Pollack, 1998). Try to balance client and payer need by keeping both informed and by maintaining a good working relationship with both.

**Abandonment and Termination**

Meeting a client’s current needs and giving all the treatment that might benefit a client are often two different things. Learn to meet the current need. The client can return for more service in the future to meet other needs.

An inadequate assessment or diagnosis at the outset can lead to the wrong focus during treatment and thus to inadequate treatment because the pre approved sessions run out. When clients are terminated early without having been involved in the choices along the way, they may be anxious or angry at the provider and file charges of abandonment. Do not abandon clients. Instead do the following:

1. Do an accurate assessment and diagnosis and develop an appropriate treatment plan;
2. Keep the client informed along the way via informed consent;
3. Try to ensure that the client does not perceive you as abandoning him/her (this is one reason for advocating for more sessions);
4. Meet the client’s current need; and
5. Formalize your termination process:
   a) Discuss termination with the client early and consider the client’s needs and views;
   b) Provide the client with appropriate pre-termination counseling, including exploration of options for the future;
c) Explore the alternative options and make appropriate recommendations; and
d) Take reasonable steps to get the client immediate additional help if she/he needs it via referral or direct services from you (Nagy, 1998).

Sweeney, Stutman, and Martin (1998) provide four options open to a provider if a MC organization refuses the clinical recommendations of a provider, e.g., for more sessions. The provider can:
1. Continue treatment based on the provider's own clinical judgment (even if the MCO won't pay);
2. Continue treatment while appealing to ensure no harm to the client;
3. Can terminate treatment and take the associated ethical and legal risks; and
4. Can help the client get services elsewhere.

It is best to error on the side of good judgment and to minimize risk.

Incident to Care

In Medicare, “Incident to” care includes services provided by non-physicians that are performed incident to a physician’s care and which can thus be reimbursed at the physician’s rate. Non-physician providers include nurses, physician assistants, psychologists, social workers, biofeedback technicians, etc. Learning the rules for this process can result in very reliable reimbursement at higher rates. Gosfeld (2002) provides a good overview, including, but not limited to:
• The physician must see the patient first and establish a patient-physician relationship.
• The physician does not have to be present or see the patient during each session, but a physician supervisor who sees patients must be on site when the patient is seen. The physician needs to see the patient periodically. Some local Medicare Providers require this to be every third session. Learn the rules and follow them.
• Treatment must be incident to services provided by the physician (assessment, diagnosis, or treatment) and must be recommended by him/her.
• Medicare does not require any special credentials by non-physician providers; however state law may require licensure and that the service be within the scope of practice for that discipline.
• Incident to care services cannot be billed for hospital care, but can be billed for in-office care, nursing home care, in-home care, etc.
• Certain non-physician providers can bill Medicare directly for services using their own provider number, e.g., in the hospital, but they will be reimbursed at only 85% of the physician fee schedule. These providers can also be reimbursed for incident to care services for other services provided in accordance with the requirements for reimbursement, e.g., services provided in an office location where a physician is also providing services to clients/patients.
• To bill for incident to care the non-physician must either be employed by or in a contract with the physician so that he/she can terminate that non-physician services to his/her patients and so that the billing is done under his/her direction and number.
• Incident to care rules differ for other third-party payers.
• Incident to services must be face-to-face, it cannot include consultations where the patient is absent.

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Biofeedback Billing and Coding Issues

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Abstract: Billing and coding concerns are unavoidable for most clinicians. Biofeedback codes have evolved over the years and options are available for services typically provided by biofeedback practitioners. The most appropriate code may not be covered by a client's insurance company leading to the use of less specific codes in the search for reimbursement. The risks of this creative coding are discussed and short and long-term strategies to deal with these issues are presented.

Introduction

For most clinicians, billing and coding is a necessary evil. Some providers are able to make a living on a fee for service basis, but most often insurance companies and other third party payers are a major source of reimbursement. In order to bill insurance companies we must use a CPT code (Current Procedural Terminology) that accurately reflects what we have done, as well as a diagnostic code from ICD-10. Prior to 1997 there were several coding options available for biofeedback clinicians but currently there are only two specific codes for biofeedback, 90901 and 90911. The 90911 code is used for bladder and bowel work while 90901 is a generic biofeedback code for all other applications. There are also two codes, 90875 and 90876, which are used for a combination of psychotherapy/counseling and biofeedback—90875 for 20-30 minute sessions and 90876 for 45-60 minute sessions.

Individual third-party payers do not all pay for all of the CPT codes and they are not obligated to do so. Each third-party company or agency determines its own rules. In a time of increasing health care costs, many insurance companies have restricted or eliminated coverage for biofeedback services. The companies also decide how much they will pay for each code and biofeedback codes are often reimbursed at a low rate.

Medicare

Medicare is a major player in the billing world because many insurance companies base their payments upon Medicare's rate of reimbursement. The Medicare rules regarding biofeedback are also unusual. Following is a verbatim section from the Local Medicare Review Policy (LMRP) in Florida (Medicare Publications Department of First Coast Service Options, Inc., 2001).

"Biofeedback training is covered under Medicare when it is reasonable and necessary for:
1) Muscle reeducation of specific muscle groups; or
2) Treatment of pathological (disease based) muscle abnormalities of spasticity; or
3) Incapacitating muscle spasm or weakness and more conventional treatments (e.g. heat, cold, massage, exercise, support) have not been successful."

This is a very restrictive interpretation of biofeedback. It runs counter to the definition of biofeedback provided by Medicare that mentions training to improve control of autonomic functions (op. cit., p. 66). Medicare also covers some incontinence training but specifically notes that, "Biofeedback therapy is not covered for the treatment of ordinary muscle tension states or for psychosomatic disorders," and psychiatric disorders are also excluded (op. cit., p. 67). Medicare does not cover the more common applications of biofeedback for relaxation training and to lower arousal. The only applications of biofeedback eligible under these requirements are specialized programs working to improve motor function for neurological (brain injured and stroke) and orthopedic patients.

The situation is even bleaker when the rest of the LMRP is reviewed. The Florida LMRP is confusing in that it blends the 90901 and 90911 codes together. The LMRP requires the continuous presence of a physician or qualified non-physician practitioner. It also states that evaluation and treatment should be completed within two to three sessions.

Relative Value Units

Medicare's payments are based upon a schedule of Relative Value Units (RVU) that assign a weighting to each of the codes in the CPT. The 90901 code has a RVU of .41 and the 90911 code has an RVU of .89. The allowance for 90901 is $50.45 (in South Florida) and will vary by region. The 90901 code has no time restrictions and the pay is the same for 20 minutes of biofeedback or for 3 hours.

Claims and Reviews

When the 90901 code was first introduced in 1997, Medicare decided to suspend the automatic payment of biofeedback claims. Most Medicare claims are processed by computerized systems and payment is virtually automatic if all the provided information is correct. Claims with the 90901 code were separated and manually reviewed. The clinician was required to provide a history and physical, treatment plan and office
notes to demonstrate that the biofeedback training was medically necessary.

Unfortunately, many of the local carriers were not prepared to make the reviews properly. Office staff were pressed into service with little or no training, but were still responsible for making the determination of eligibility for payment. In my own experience, claims were processed erratically and denials were frequent. In some cases a voucher was provided for four or five consecutive sessions of biofeedback with the same patient. The supporting documentation for each date was identical with the only difference being the office notes for the given session. Many times some of the sessions were covered while others were denied for lack of medical necessity.

I have previously written in this magazine about this problem and the options available when faced with a denial of coverage by Medicare. Additional reviews and hearings are available to the stubborn provider unwilling to take no for an answer. In my own case, I wrote so many letters to Medicare that they eventually tried to silence me completely by stating that I was practicing outside of my scope of practice as a psychologist by providing biofeedback for movement disorders. I was told that if I continued to submit biofeedback claims to Medicare I would be liable for prosecution. Fortunately, I was able to get a declaratory statement from the Florida Board of Psychology affirming my right to provide all forms of biofeedback under Florida statutes. When I sent this statement to the Florida Medicare Carrier they were at first unwilling to rescind their initial letter until I insisted that I wanted in writing permission to continue billing Medicare for biofeedback training.

Under the most recent LMRP (op cit., pps. 67-68), Medicare is no longer requiring supporting documentation and automatic payment has been reinstated for most claims. The Medicare rules also permit a provider to request additional payment by using a modifier code (22). The provider must submit supporting documentation to prove that the case is more complex than standard applications and that additional time and effort is required. When using this modifier, the voucher is pulled for manual review and invariably denied because of lack of medical necessity. After a long conversation with senior officials in the Florida office, I realized that the additional payment option is a sham. These requests are routinely denied while payment will be made for clinicians willing to provide biofeedback for an allowance of about $50 per session—regardless of time spent.

Recent Medicare Developments

In late June 2003 I received a letter from the Florida Medicare carrier that a revision of the LMRP for biofeedback has been drafted. The Florida Medicare B Update is no longer readily available in hard copy but the revised policy was posted at their website (www.floridamedicare.com). The draft LMRP includes one major change: a brief list of required diagnoses for the 90901 code was added. This list included major paralytic disorders (quadriplegia, paraplegia and hemiplegia) and one condition relating to incapacitating back spasms.

Under the current system, the Medicare carrier is not able to insure that biofeedback codes are submitted appropriately. Without a system of manual review, providers could bill Medicare for biofeedback for non-covered conditions and payment would be made regardless of the diagnosis provided. In one case, I mistakenly submitted a biofeedback voucher to Medicare for a psychotherapy client and Medicare paid for the biofeedback linked to a psychiatric diagnosis. (I returned the payment with a corrected voucher). While there is little incentive to abuse the biofeedback code because of low reimbursement, Medicare would like to ensure that all biofeedback claims are medically necessary within their guidelines. However, the list of acceptable diagnoses excludes many conditions that are currently acceptable including all orthopedic disorders and motor problems due to peripheral nerve dysfunction. The insurance committee of AAPB helped organize a response to these proposed revisions but no final decision was made at the time this article was written.

The situation regarding Medicare and biofeedback has also been affected by the recent adoption of a cap on outpatient rehabilitation services (Medicare Publications Department of First Coast Service Options, Inc., 2003). This limitation has been floating around for several years; Congress originally passed the cap on outpatient rehabilitation funding as part of the Balanced Budget Act of 1997. However, there was a strong outcry from the physical and occupational therapy professional groups and the cap was delayed twice by moratoriums that expired at the end of 2002. Biofeedback is included in the list of services affected by the outpatient cap and Medicare will pay $1590 per year for outpatient physical therapy and speech therapy and another $1590 per year for occupational therapy. The only exception is for outpatient services provided by a hospital or under arrangement with a hospital.

Creative Coding

Faced with a confusing array of exclusions and restrictions combined with poor reimbursement for biofeedback, many practitioners have reluctantly turned to the practice of creative coding. This refers to the use of alternative CPT codes that are related to the reason for the biofeedback training but are less specific. Alternative codes include neuromuscular retraining (97112), cognitive retraining (97532), gait training (97116) and even the psychotherapy codes (90806 and 90804), and the newly developed health and behavior codes (96152).

The use of creative coding creates a dilemma on many fronts. There are legal, financial, practical and ethical issues involved in every coding decision. The basic rule for coding is that the most specific code available that describes the services provided should be used. However, if a provider uses one code, he or she may not be paid while an alternative code that is a near fit may be reimbursed. This is a slippery slope and if a provider knowingly submits an inappropriate code, he can be subject to prosecution or required to return payments.

The situation becomes even more confusing when the insurance companies tell us to use a less specific code. In Florida, the workers compensation system and other state agencies have been willing to accept the use of the 90876 code for biofeedback training. When calling private insurance companies seeking prior authorization for

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Is Psychoneuroimmunology Relevant to Clinical Research and Practice?

Sharon Lewis, RN, PhD, FAAN, San Antonio, Texas

Abstract: Psychoneuroimmunology (PNI) is a multidisciplinary field of inquiry about how the mind influences the neuroendocrine and immune systems and ultimately how interactions among these systems impact health and well-being. Psychological stressors result in central nervous system (CNS) modulation of the immune system. The central nervous system and immune system can communicate via neural and hormonal pathways. A dramatic consequence of these pathways is that activation of the central nervous system by stressful experiences can result in altered immune function. Stress and other behavioral and psychological factors may be linked to disease susceptibility and progression through either direct CNS-immune system links or CNS-endocrine-immune system pathways.

Introduction

The nervous system, the endocrine system, and the immune system are interrelated, and thus the ultimate response of the person to stress reflects the integration of the nervous, endocrine, and immune systems (Figure 1). Furthermore, stress activation of these systems affects other body systems, such as cardiovascular, respiratory, gastrointestinal, renal, and reproductive systems. As a result, an individual’s response to stress has the potential to lead to disorders and diseases of adaptation in any body system (Table 1).

Because it is now known that the brain is connected to the immune system via neuroanatomical and neuroendocrine pathways, stressors have the potential to lead to alterations in immune function. Nerve fibers extend from the autonomic nervous system and synapse on cells and tissues (i.e., spleen, lymph nodes) of the immune system (Webster & Tonelli, 2002). In turn, the cells of the immune system are equipped with receptors for many neuropeptides and hormones, which permit them to respond

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Table 1 Examples of Disorders and Diseases of Adaptation to Stress

- Angina
- Asthma
- Carpal tunnel syndrome
- Depression
- Dyspepsia
- Eating disorders
- Fibromyalgia
- Fatigue
- Headaches
- Hypertension
- Impotence
- Insomnia
- Irritable bowel syndrome
- Low back pain
- Myocardial infarction
- Peptic ulcer disease
- Rheumatoid arthritis
- Sexual dysfunction

Figure 1 Neurochemical links among the nervous, endocrine, and immune systems. The communication among these three systems is bidirectional.
susceptible to infection. For example, psy-

The network that links the brain and immune system is bidirectional. Signals from these systems travel back and forth. This allows for reciprocal communication between these systems. Consequently, not only do emotions modify the immune response but products of immune cells send signals back to the brain and alter its activity.

Just as the brain and immune system share mutual communication pathways, so do the endocrine and immune systems. As a result, the immune system also affects the endocrine system, while hormones of the endocrine system feedback upon the immune system, altering its function.

Because of the multiple links between areas of the brain concerned with stress-mediation and emotions, there is the possibility that stress may play a role in immune-based illness (Sternberg, 2000). It is hypothesized that stress-induced immunosuppression may increase the risk of progression of immune-based diseases such as multiple sclerosis, asthma, rheumatoid arthritis, and cancer. The stress of inadequately treated postoperative pain has been shown to impair the immune system’s surveillance of tumor cells. It is believed that surgical manipulation of tumors may lead to dissemination of tumor cells in the body and increase the risk for postoperative tumor spread. Therefore, adequate reduction of postoperative pain and stress is important for cancer control (see author feature on Gayle Page).

Stress may also alter immune function in such a manner that an individual is more susceptible to infection. For example, psychologic stress may increase risk for developing the common cold (Cohen, Doyle, & Skoner, 1999). The link between stress and susceptibility to infectious disease has also been demonstrated in a study of elderly individuals caring for a spouse with Alzheimer’s disease. The chronic stress of caregiver burden in these individuals was associated with an impaired immune response to influenza vaccine. The results of this study suggest that chronic stress may increase an elderly person’s vulnerability to influenza (Kiecolt-Glaser et al., 2002).

Biobehavioral interventions can enhance immunocompetence. These strategies include relaxation and imagery techniques, biofeedback-assisted relaxation strategies, humor, exercise, mindfulness-based meditation, and social support (Kemeny & Greunewald, 1999; Sephton, Terr, & Sites, 1998).

A better understanding of health and disease states will occur when the interactions between the mind and body are better understood. Nurse scientists are involved in many different areas of research related to PNI. Some of these nurses and their work are featured in brief summaries following this article.

References


Asthma, Breast Cancer, Genetics, and Immune Response

Duck-Hee Kang, RN, PhD, Birmingham, Alabama

Dr. Duck-Hee Kang started her nursing career in Seoul, Korea. She received a PhD in a joint program of nursing and psychology at the University of Wisconsin - Madison. Her focus on physiological psychology gave her a solid foundation to investigate mind and body interactions.

Her research initially focused on asthma. Because psychological stress is thought to exacerbate asthma symptoms, it is important to understand how stress actually affects asthma and what immune mechanisms influence the relationship between psychological stress and asthma.

She is currently examining the effects of an 8-week intervention on immune responses, psychosocial well-being, and clinical symptom management in newly diagnosed breast cancer patients. The intervention is designed to be comprehensive to include three components to support the mind and the body simultaneously: stress management, social support, and exercise training. After the intervention, patients are encouraged to continue their practice that they learned in the intervention. When they are followed for a year, patients in the intervention group show less psychological distress, less fatigue, and better quality of life.

Her next research study will incorporate genetics to look at the genetic-environment interactions on health outcomes. One initial approach is to examine the effects of psychological stress and nutritional pattern (high fat and low antioxidant intake) on oxidative stress, which, in turn, can cause increased DNA damage. This process may lead to more frequent mutations in tumor suppressor genes and ultimately the expression of cancer, particularly in those individuals at high risk for developing breast cancer. The findings of this study can lead to developing additional strategies to improve health and potentially to delay the expression of cancer.

Maternal-Infant Interactions and Immunology

Maureen Groer, RN, PhD, FAAN, Knoxville, Tennessee

Dr. Maureen Groer is a nurse-physiologist whose research career has been devoted to psychophysiological research analyzing stress-immune-endocrine-cardiovascular links in children and adults. Her most recent interests revolve around behavioral immunology in women during the perinatal period. The focus of this interest has been on maternal stress-immune links which potentially might influence interactions between the mother and infant.

Her current National Institutes of Health funded study is examining the relationships between stress and immunity in postpartum mothers. Maternal stress may produce deleterious stress responses in the infant. Such stress states have the potential for producing immunological consequences in both the mother and the infant. Maternal stress and infectious illness also appear to be related both in mother and infant. The goal of this research is to determine if lactation provides mothers with particular health benefits such as better immune function, fewer infections, and less stress reactivity.

Other projects currently being carried out by Dr. Groer’s doctoral students and other colleagues include a study of postoperative massage on wound drainage cytokines after open heart surgery, a study of the influence of milk melatonin on infant sleep-wake cycles, a study examining the effect of maternal insecticide exposure on human milk and infant development, and a study examining the psychoneuroimmunologic effects of rape.
SPECIAL TOPICS: NURSING RESEARCH IN PSYCHONEUROIMMUNOLOGY

Stress-Busting Program for Caregivers of Patients with Alzheimer’s Disease

Sharon Lewis RN, PhD, FAAN, San Antonio, Texas

Dr. Sharon Lewis has a PhD in immunology from the University of New Mexico. She is an experienced researcher in the area of biobehavior and immunology. Her strong research training and experience in basic science provides a base for investigating biological, immunological, and physiological outcomes. Her background as a nurse with research training in basic science has led to her success in bridging clinical and basic science research.

She focused on the study of host defense in renal dialysis patients from 1983 through the mid 1990s and has now shifted focus to the newly emerging field of psychoneuroimmunology (PNI). For the past eight years she has been working on a NIH-funded research project to determine the effectiveness of relaxation therapy for caregivers of patients with Alzheimer’s disease. This longitudinal study involves working individually with caregivers and monitoring the effectiveness of the intervention using biofeedback measures, immunological parameters, and self-report measurements. Findings from this study indicate that over the course of study caregivers had improvements in immune function and mental health scores and decreases in emotional distress variables.

She has recently begun to investigate the effectiveness of structured educational support groups for caregivers of patients with Alzheimer’s disease. Outcome measures include biofeedback measures, immune parameters, and emotional distress variables.

Stress Management Interventions for Patients with HIV Disease

Nancy McCain, RN, DSN, FAAN, Richmond, Virginia

For over twenty years Dr. Nancy McCain has studied the relationship between stress and coping in people with chronic illness. She did a postdoctoral fellowship in psychoneuroimmunology in HIV disease at Rush University in Chicago.

Currently she has a grant funded by the National Center for Complementary and Alternative Medicine, a relatively new center at the National Institutes of Health. Her research involves three short-term stress management interventions including cognitive-behavioral stress management training, focused Tai Chi training, and spiritual growth groups for patients with HIV disease. Her research compares the effectiveness of these interventions using psychosocial functioning and quality of life measurements, along with immune function parameters. Her goal is to reduce stress and attenuate immune dysfunction for patients with HIV. Additionally, the current study of alternative techniques may expand the options for stress management.

In a previous NINR-funded study, McCain and her team found that although patients who participated in traditional stress management behaviors had higher quality of life and reduced stress, the results dissipated by six months. To counteract this phenomenon, her current research study incorporates booster sessions for participants at four and eight months.

Dr. McCain also is developing applications of the PNI model to persons with impaired immunocompetence due to cancer or its treatments. A novel stress management intervention is planned for women with breast cancer.
SPECIAL TOPICS: NURSING RESEARCH IN PSYCHONEUROIMMUNOLOGY

Animal Models of Psychoneuroimmunology Research
Gayle G. Page, RN, DNSc, FAAN, Baltimore, Maryland

Dr. Gayle Page's postdoctoral study was in biobehavioral sciences at the University of California, Los Angeles, CA. She currently uses an animal model of breast cancer to illustrate how painful stress increases susceptibility to the spread of cancer. The animal models use conditions that are similar to conditions of humans in an effort to stimulate biobehavioral processes that occur in humans and to make those processes more accessible for study.

Dr. Page's program of research is dedicated to providing evidence that unrelieved pain has significant biologic consequences, and has focused on two areas. In the first area, she has shown that undergoing and recovering from surgery is tumor-promoting, and that providing pain relief significantly ameliorates this consequence. Interventions that have been successful in ameliorating the tumor-enhancing effects of surgery have included analgesics. The second area has focused on the development of natural killer cell function in the rat and immune responsiveness to stress in the young animal. Additionally, her studies have considered possible gender differences in immunity and responses to stress.

She recently has begun to explore the impact of early postnatal pain on responses to both painful and non-painful stress in the mature animal. Her early findings indicate that repeated early postnatal pain experiences alter tumor susceptibility responses to non-painful stress in the mature animal.

Biofeedback Billing and Coding Issues
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biofeedback we often have to perform an elaborate dance to find a suitable code that is permissible within that system. In some cases, the insurance companies will permit only certain types of practitioners to use specific codes.

It is important to remember that our relationship with third party payers if often an adversarial one. Most insurance companies, particularly the managed care companies, are primarily interested in curtailing their costs. If they can get away with denying coverage without breaking any laws they will tend to do so. We need to be up front and honest when dealing with insurance companies, telling them that we are providing biofeedback training because it is in the best interests of the patient. If they deny authorization, ask to speak to a supervisor and request a review of that determination. We also need to mobilize our clients and ask them to insist that biofeedback be a covered modality in their insurance programs. In the long run, the use of creative coding is detrimental to the field of applied psychophysiology and biofeedback. Reimbursement decisions are often based upon retrospective reviews of submissions. If much of the biofeedback being performed is slipping under the radar with other codes then the companies will continue to restrict or deny coverage based upon lack of utilization. This is, of course, a classic vicious circle. Reimbursement rates will not increase until there is a dramatic increase in the number of biofeedback submissions. However, providers will be reluctant to submit biofeedback claims with little hope of obtaining fair compensation.

Action Needed
All biofeedback practitioners and researchers need to work together to get increased recognition for the value of biofeedback training. The RVU for 90901 (.41) is woefully inadequate and does not reflect the time, effort and expense of providing quality biofeedback training. The RVUs are adjusted on a five-year cycle by a committee from the American Medical Association. These people have no working knowledge of biofeedback. It is a priority of AAPB to present a strong case to the RVU Review Committee in its next session.

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Abstract: In Part I of this three-part series, the rationale for using biofeedback (BFB) with athletes was explored in terms of the competitive advantages it can bring to a sports training program. Most of these interventions have been designed around improving performance through neuromuscular retraining, optimizing arousal, and/or self-regulation of autonomic functioning. Some of these approaches can assist, for example, shaving seconds, perhaps even milliseconds, off finish times. Others are structured around helping the athlete to maintain focus and control in a competitive environment otherwise filled with performance-inhibiting distractions. Research has shown that the improvements brought forth by these strategies can be substantial, yet even the most subtle modifications could be the difference between winning and losing, gold and silver, or simply qualifying vs. not qualifying for a team. The author contends that BFB-based sports applications represent a distinct specialization within the exercise and sport sciences, one which he refers to as sport psychophysiology (SPP). This article, Part II in the series, provides a comprehensive outline of the more common applications in SPP. In a subsequent article, we will explore the potential for new frontiers in SPP research and practice.

Current Psychophysiological Measures in Sport

BFB can be conceptualized as information fed back to a patient about biological processes, mostly autonomic, that are not typically under voluntary, conscious control. This information underlies the mind-body interplay leading to self-regulation of autonomic tone. BFB is generally immediate which, in a sports context, enables the athlete to continuously adjust work output to achieve or maintain a pre-specified goal (Zaichkowsky & Fuchs, 1989). The most common SPP modalities are discussed below in terms of somewhat limited, though surprisingly favorable, empirical research.

Electrocardiography (EKG)

HR is one of several cardiorespiratory phenomena that can provide an efficient measure of exertional intensity. Applied studies have consistently shown that subjects can learn through feedback to lower their HR even while maintaining a steady workload (Perski, et al, 1985). Decreased HR corresponds with decreased oxygen consumption, meaning that HR biofeedback can produce improved cardiopulmonary functioning with no apparent cost to working muscles, a fact that can be validated by lactic acid testing (discussed in part III of this series). The recognition that HR BFB can improve exercise economy has led over the past 10 or 15 years to a proliferation of HR monitors in sport (Burke, 1992). While each of these recommendations may have validity, most endurance training is based on “periodization” schedules involving five annual macrocycles (transition, foundation, strength, power, and peaking phases) as well as fluctuating microcycles within each of these phases.

The workloads differ in all of these cycles and are typically calibrated by HR zones ranging from high intensity intervals (85 – 95% HR max) to long, slow distance (LSD) workouts in the 65 – 75% HR max range (Burke & Newton, 1993). A variation to the HR max model is calculating HR reserve (HRR), which is quantified as the difference between resting and maximal heart rate. Some athletes prefer to tailor their exercise regimens based on a percentage of maximal HRR, so that a cyclist, for example, may train on a given day at 80% HRR max. Some consider this method to be not only reliable, but superior to simply using %HR max because of closer correlation with submaximum %VO2 value, explained in more detail below. Whatever method one employs, HR moni-
tors guide training by beeping when the athlete is no longer in the target range. Once familiar with measuring their own HR, the endurance athlete can begin to accurately estimate it even without the aid of the monitor (House, 1984). Another worthwhile application of HR feedback, particularly with elite athletes, is teaching them to routinely monitor HR upon awakening in order to avoid the perils of over-training.

Another and more recent adaptation of electrocardiographic BFB involves the measurement of variations in HR rhythm, which is referred to as heart rate variability (HRV). This naturally occurring and quite normal arrhythmia (clinically referred to as respiratory sinus arrhythmia: RSA) has important correlations with cardiovascular conditioning and is therefore of significance to SPP, particularly in our work with endurance athletes. Because BFB of HRV is a newer adaptation in SPP, we have chosen to discuss it in greater detail in Part III.

Surface Electromyography (SEMG)

Muscle contractions are actuated by the electrical activity within a motor unit. Electromyography uses surface electrodes contacting the skin above the muscle to measure the electrical activity associated with these contractions. It has been suggested above that SEMG can be useful in arousal reduction and sports rehabilitation. Its greatest promise, however, may be in kinesiology where SEMG is used to target sport-specific muscles for differential training and development.

Nowhere, perhaps, is this better exemplified than in archery, a sport where BFB has been found useful in better understanding the muscular biomechanics of shooting and how to regulate these to optimize performance. In one study (LeRoyer, et al, 1993), the posterior deltoid was sequentially measured throughout the push-pull phases of repeated shots. Two phenomena, tremors and slow oscillations, were found to significantly influence the accuracy of each shot.

Regulating these variables to improve performance was made possible through auditory EMG feedback.

Another fairly recent study involving elite archers (Wei-Duo, 1995) used SEMG in measuring postural variables associated with the process moving from drawing the bow to shooting the arrow. Their study suggested that focusing on specific muscles may be less important overall than the consistency of one’s posture from shot to shot. In this instance, SEMG data revealed that archers demonstrating the greatest postural consistency experienced the best overall performance.

Similar applications of SEMG have been reported across a wide variety of sports, including cross-country skiing (Perrey et al, 2000), basketball (Kavussanu et al, 1998), running (Blumenstein et al, 1995a; Hatfield et al, 1992), gymnastics (Wilson & Bird, 1981), rifle shooting (Prapavessis et al, 1992), fencing (Chen et al, 1997), and canoeing/kayaking (Blumenstein & Bar-Eli, 1998).

Thermal Feedback (TF)

Mediated by the sympathetic nervous system, digital skin temperature (DST) tends to increase with peripheral vasodilation, which usually occurs with relaxation. DST decreases as a function of vasoconstriction, typically brought about by psychophysiological arousal (Peek, 1987). As with other BFB techniques, TF has been shown to be useful in regulating sympathetic arousal to optimize athletic performance (Kikuchi & Kodama, 1995). In keeping with the Yerkes-Dodson inverted-U theory, Kamimura & Kodama (1995) reported bidirectional use of TF in which athletes learned to modulate DST to both decrease arousal where it had become excessive, and to increase it as a method of “psyching-up” for enhanced performance.

In practice, TF may have more limitations than other SPP interventions due to potential confounds. One such problem is that clinical results can be skewed by ambient air temperature, especially cold. This may not always hold true, though, as Kappes and Chapman (1985) found in studying whether athletes exposed to extreme cold could retain the ability to increase DST as a means of decreasing arousal. It was discovered that not only were trained subjects able to accurately estimate and reliably increase their DST in the cold, but that those whose TF training actually occurred outdoors could raise DST significantly higher, even in the cold, than those trained indoors. This potential confound, then, seems surmountable.

Another possible difficulty with TF is that the relationship between skin temperature (ST) and performance may be somewhat more complicated than simply interpreting it as a direct function of autonomic arousal. To illustrate, ST will fluctuate according to the volume of blood flowing to muscles, a condition which changes depending upon level of exertion. Under intense training, blood flow to the muscles is said to quadruple, producing significant increases in ST as the body directs heat away from its core (Sime, 1985).

Buckwalter (1997), on the other hand, discusses how exercise can promote sympathetic vasoconstriction in working muscles, which would seem to lower ST. The point here is that the relationships between arousal, exertion, and performance are complex and need to be fully sorted out to avoid misinterpretation of outcomes.

It is also interesting to note that higher ST is not always most desirable in competitive or pre-competitive settings. A study of rhythmic gymnasts, for example, during the 1984 Olympics (Schmid & Peper, 1987) found that athletes with higher DST prior to performance actually performed worse than counterparts with lower DST. As with many other studies, this suggests that while some sports (or individual athletes) might benefit from arousal reduction techniques, others may require activation strategies to improve their results. Although the current literature shows TF to have some utility in motor skills training, it also reflects a need for additional research to tease out some of the variance in sport-specific outcomes.

Respiratory Feedback (RF)

RF, also called pneumography, involves the use of pressure-sensitive strain gauges applied abdominally and/or thoracically to measure quality and quantity of respirations. Controlled breathing is considered by some to be “perhaps the most important arousal reduction technique” (Zaichkowsky & Takenaka, 1993). When performed correctly, diaphragmatic breathing can enhance the bio-availability of oxygen to working muscles, which can thereby improve athletic performance. Shooters, for example, quickly
learn the importance of breath holds for the few moments prior to, during, and following a shot in order to improve accuracy (Landers, 1985).

There are suggestions in the literature that athletes as a whole tend to breathe incorrectly and that significant performance increments could accrue simply from mastery of proper breathing mechanics. While controlled (or abdominal) breathing has traditionally been used as a means of reducing arousal (Schwartz, 1987), hypoaroused athletes can also be trained to modify breathing rhythm in order to become energized. This can be achieved through slow, abdominal breathing, in the first instance, or hyperventilation in the second. This one medium, therefore, i.e., respiration, can be used to influence arousal in either of two directions (Gould & Udry, 1994).

Breathing patterns have also been found to fluctuate simply with imagery involving athletic performance. As athletes imagine themselves in various stages of their event, changes can occur in respiration rate, tone, and oxygen consumption (VO2), all of which can measurably impact performance. Because autonomic functioning is dependent on breathing, Blumenstein et al (1995b) recommend that respiration indices be an integral part of SPP assessments.

**Electrodermal Feedback (EDF)**

Through what is referred to as galvanic skin response (GSR), EDF enables inferences to be made about sympathetic arousal based upon eccrine sweat gland activity. GSR is a function of the increased sweat stimulated by psychophysiological arousal. It is measured subdermally through the skin’s conductance of electricity (Peek, 1987).

There has been some interesting research showing inverted-U relationships between athletic performance and GSR levels. Landers (1985), for example, mentions rifle shooters who were found to register greatest accuracy when GSR was 15–30% above resting levels, yet least accuracy when GSR was either <15% or >300% of preshooting levels. Empirical correlations such as this have suggested that EDF can aid in the mental skills training that is a key part of successful athletic competition.

Most of the recent literature involving EDF incorporates it as part of a multimodal intervention aimed at teaching autonomic regulation and/or reducing arousal. To illustrate, Blumenstein et al (1997) exposed athletes to self-regulation training involving multiple BFB measures (including EDF) as part of their “five-step” approach to mentally preparing for competition. In other instances, GSR has been used as a gauge of treatment efficacy when the actual BFB modality was EMG (Blumenstein et al., 1995a). Finally, EDF has also been paired with HR and frontalis EMG in examining the sensitivity of respiration as a measure of relaxation and imagery techniques in athletes (Blumenstein et al., 1995b).

**Neurofeedback (NF)**

It has only been within the past 10 years or so that there has been significant growth in NF research, much of this occurring in the areas of ADHD and chemical dependencies. Until recently, very few studies were conducted involving NF and athletes. To put this in perspective, Sandweiss & Wolf (1985), in their classic book, *Biofeedback in Sports Sciences*, devote only a few pages to what they called “electroencephalographic (EEG) feedback,” now known generically as NF. Although to date there remains comparatively little work involving EEG in the sports sciences, this is presaged to change—perhaps rapidly. Heralded under the banner of “peak performance training,” there is a growing recognition of significant potential in this field, with NF being widely regarded as very much in its infancy.

Basically, NF employs EEG to facilitate changes in the electrical rhythms of the brain. Applied to motor skills development, this approach is theoretically poised to train athletes to replicate brain wave patterns that will be shown to correlate with optimal performance in their particular sport. Though perhaps a long way from developing sport-specific EEG profiles, there has already been rudimentary progress in this direction (Wilson and Gunkelman, 2001). It is certainly clear, for instance, that the attentional exigencies of a sport like golf may involve different forms of neural entraining than we might expect in alpine skiing or marksmanship.

Sports applications of NF essentially focus on arousal reduction and improvements in attentional control. A study by Landers et al (1991) showed NF benefiting archers, while Sime et al (2001) report on studies in which NF has led to enhanced performance in such diverse activities as golf, diving, and even equestrian sports. Csikzentmihalyi (1991) coined the term “flow” to describe a mental state associated with optimal athletic performance through highly focused attention and total absorption in a particular task. Although “flow” is frequently experienced as an unbidden psychic state with nevertheless profound and salutary, psychomotor implications, NF seems to show strong potential in helping athletes to evoke the state at will.

**Conclusions**

This literature review makes it clear that BFB has already been used widely and effectively in the sport sciences. This apparent success, however, is not entirely without problems. As we will see in Part III of this series, meta-analytic studies have identified consistent methodological problems in SPP research over the past 20 years. Be this as it may, our contention is that not only are such problems surmountable, as in any of the behavioral sciences, but there seem to be additional frontiers for actually expanding the scope of SPP. It will be shown that some of the newer technologies in exercise physiology suggest opportunities for designing BFB instrumentation around such seemingly esoteric variables as cortisol, catecholamines, blood lactate, oxygen consumption, ventilatory capacity, heart rate variability, and others. In short, the author will cite literature supporting an entirely optimistic view of SPP as a credible and specialized discipline within the exercise sciences.

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Applying Audio-visual Entrainment Technology for Attention and Learning – Part III

David Siever', Edmonton, Alberta, Canada

Abstract: Attention Deficit Disorder (ADD) and Attention Deficit Hyperactivity Disorder (ADHD) are unique attentional disorders which primarily involve slowed frontal brain wave activity and hypo-perfusion of cerebral blood flow in the frontal regions, particularly during tasks such as reading. A variety of disorders, such as anxiety, depression and Oppositional Defiant Disorder (ODD), are often co-morbid with ADD, thus creating a plethora of complications in treatment procedures. Audio-Visual Entrainment (AVE) lends itself well for the treatment of ADD/ADHD. AVE exerts a major wide-spread influence over the cortex in terms of dominant frequency. AVE has also been shown to produce dramatic increases in cerebral blood flow. Several studies involving the use of VAVE in the treatment of ADD/ADHD and its related disorders have been completed. AVE as a treatment modality for ADD/ADHD has produced wide-spread improvements including secondary improvements in IQ, behaviour, attention, impulsiveness, hyperactivity, anxiety, depression, ODD and reading level. In particular, AVE has proven itself to be an effective and affordable treatment of special-needs children within a school setting.

Introduction

All mental functioning involves an element of arousal, that is, the awakeness or alertness of the brain. The degree of the brain’s (cortical) arousal dramatically affects how well a particular function can be performed. For instance, it is almost impossible to pay attention if the brain is producing an abundance of alpha or theta (Oken & Salinsky, 1992), just as it’s difficult to fall asleep with excess beta and low alpha activity in an eyes closed condition.

People with attentional problems such as Attention Deficit Disorder (ADD) or Attention Deficit Hyperactivity Disorder (ADHD) have particular difficulty shifting their pre-frontal lobes into gear (suppressing alpha and/or theta) during cognitive tasks, particularly passive, spatial tasks such as reading (Lubar, et al., 1985, Tansey, 1985). However, high levels of stimulation (which AVE provides in abundance) have been shown to improve attention and reduce hyperactivity (Cohen & Douglas, 1971; Leuba, 1955; Zentall, 1975; Zentall & Zentall, 1976), and the presence of rock music has also been shown to reduce hyperactivity (Cripe, 1986). This may explain why those with ADD do so well with video games and action sports. Unless the activity is exciting (pushing up arousal), the pre-frontal and frontal lobes quickly lose their attentiveness and activation. Theta and/or alpha increases dramatically and the person “fogs out.”

ADHD rarely occurs in isolation and is often combined with other conditions including depression, oppositional defiant disorder, conduct disorder, obsessive compulsive disorder, learning disabilities, anxiety disorders, and other significant psychological, psychiatric, and neurological problems (Lubar, 1999; Hunt, 1994; Barkley, 1989).

Quantitative EEG (QEEG) Analysis of Brain Function

QEEGs have proven reliable methods for assessing brain function (Sterman, 1999; Sterman & Kaiser, 2001; John, et al., 1977; Thatcher, 1998; Chabot & Serfontein, 1996) as shown in Figure 1, a qeeg of a teenager with ADD. One subgroup (Lubar, 1999; Gurnee, 2000) of ADD typically shows higher than average alpha, more prominent on the right frontal side (left image). During a reading task, the alpha activity increases frontally (instead of suppressing) with larger increases on the right side (center image). This increase in alpha during a cognitive task is known as inversion, in that higher alpha or theta levels occur during task (in this case reading) than during a simple eyes-open (EO) condition. This inversion is experienced as mental “fog” while reading. Following one session (right image) on the DAVID Paradise XL, alpha normalizes and reading speed and comprehension are improved.

Glucose Uptake Characteristics of ADD

Considering that alpha is basically an “idling” rhythm, it would be logical to assume that both cerebral blood flow (CBF) and glucose metabolism would fall during periods of increased alpha activity. ADD children show hypo-perfusion of blood (as measured with functional magnetic resonance imaging) in the striatum (putamen), and this directly correlates with hyperactivity (Teicher, et al., 2000). When the same children are treated with methylphenidate, the relative increase in blood flow through the putamen directly correlates with reductions in hyperactivity.

Single Photon Emission Computerized Tomography (SPECT) is a process where a small amount of radioactive tracer is put into the blood stream through an artery. The parts of the brain that receive the most blood flow also absorb the most tracer.
through metabolism which shows up as a bright area on the image. Areas that don't absorb any radioactive tracer appear as black. Figure 2 shows the pre-frontal blood flow and metabolism in a person diagnosed with ADD (Amen, 1998, p. 123). Notice that the pre-frontal lobes do not function well at the best of times. During concentration the pre-frontal lobes shut down quite completely, making it very difficult for this person to pay attention and process what is being read. After an application of Adderal, pre-frontal lobe function improves considerably, improving attention and reducing hyperactivity. Notice the similarities between the black “holes” in Amen’s spect (centre image) and the alpha inversion shown on the brain map (centre image) during the task conditions. Both Adderall and AVE increase cerebral blood flow. Notice the “smoothing” of brain function in Amen’s third image and the alpha “smoothing” following AVE on the DAVID Paradie.

The Educational Challenge of ADD

(excerpted from Michael Joyce – New Vision School, Minneapolis, MN)

Traditionally, educators have viewed conditions such as ADD, ADHD, and Obsessive Compulsive Disorder (OCD) as primarily medical conditions and therefore outside the realm of education. Typically, children with such conditions are referred to the medical world to identify an appropriate medication to ameliorate the problem behavior.

Children with ADHD are often disruptive in the classroom, require frequent teacher input, do not generally keep up with their peers in academic pursuits, and often require additional services due to their significant difficulty with all aspects of learning. Additionally, many children are misdiagnosed and actually have conditions of depression and anxiety. Medicating such children with stimulant medications in these cases is contraindicated and may make their conditions significantly worse. More recently, schools have become involved to a much greater degree, and now provide screening tests to identify students with attentional disorders.

This scenario suggests that a training program that results in more or less permanent resolution of ADHD symptoms would be preferred over the traditional medication management approach. NeuroTechnology (NT) is such an approach. NT, comprising neurofeedback and AVE, has been studied extensively in clinical and research settings for the past twenty years. Because intervention with NT is a training process and not a clinical intervention, it is more appropriately applied in the educational setting rather than in the clinical setting. It is also clear that this intervention will not be available through medical channels to the vast majority of children who need it due to the medical profession's reliance on medication management, rather then educational approaches for such problems. Additionally, the evidence that medication compliance is significantly lower in low-income families suggests that applying NT in inner city and rural schools in low-income areas would be a more effective method of addressing such impediments to learning. Further, low-income students often cannot afford such training from a physician or psychologist and so do not have access to such an alternative approach for the remedy of their disability, even if it is available in their area.

Studies of Attentional Disorders Using AVE as the Treatment Modality

Throughout the 1980s there were a variety of case reports of improved attention and school grades when applying AVE to treat autism and ADD, but larger studies did not yet exist. Finally, in 1990, the first group study took place of the effects of AVE on 26 eight to twelve-year-old learning disabled boys from a private and public school (Carter & Russell, 1993).

In this study, fourteen children (from a private school) received two minutes of 10 Hz stimulation, 1 minute of no stimulation, and 2 minutes of 18 Hz for 5 cycles over a 25-minute period. The students received AVE once a day, five days per week for eight weeks, totalling 40 sessions. They also listened to a tape of binaural beats (recorded from the AVE sessions) for 40 sessions at home. The public school children (n=12) received three treatments per week for six weeks totalling 18 treatments. All children could see out of their eyelets, and were encouraged to play checkers and hand-held electronic games during the treatment.

The results of the first group were considerably better. They received 22 more AVE treatments than the public school children.
Unfortunately this large difference in AVE treatment had confounded the study, making it unclear as to whether or not the binaural beats on cassette tape had any influence. Figures 3 and 4 show the pre-post results of IQ measures and the Burks Teachers’ behavior index for the private school children. Referring to Figure 4, which class of students would you want to teach?

**AVE Program as a Treatment for Behavior Disorders in a School Setting**

In 1997, Michael Joyce began using a unique dual frequency AVE session using the TruVu™ eyesets (independent field stimulation used with the DAVID Paradise units) to treat ADD and reading challenged students in two Minnesota primary schools (Joyce & Siever, 2000). He measured the children for changes in inattention, impulsiveness, reaction time, and variability as measured with the TOVA computerized continuous performance test (CPT) (Greenberg & Waldman, 1993). Figure 5 shows the children’s improvements after an average of 33 sessions (over a ten week treatment period). A normal score is 100. A score of 85 represents one standard deviation away from the norm and is considered aberrant. These results clearly show improvements in all TOVA measures.

Michael also evaluated reading ability in students from the SPALDING reading program within the school. The children were tested on the STAR (Standardized Test for the Assessment of Reading). Figure 6 shows their comparative improvements as compared with the controls’ performance. The grade equivalent (GE) ranges from grade 0 to 13 and represents a child’s actual grade reading level. For instance, if a child is assessed with a GE of 4.7, then the child is reading at the level a typical child in the seventh month of grade 4. Figure 6 shows the differences in performance between the treatment (AVE) group and the control group. The percentile rank (PR), ranging from 1 to 99, shows a student’s performance compared to his/her peers nationally. For instance, if a child has a PR of 78, then the student is performing at a level that equals or exceeds that of 78% of the children in the same grade, based on the national average. This measure shows that the control group performance decreased slightly while the AVE group improved considerably.

**The Brain Blood-Flow Connection**

Cerebral Blood Flow (CBF) has been examined in other disciplines concerned with cognition. For instance, vinpocetine, an extract from the periwinkle plant has been shown to increase CBF (Gold, et. al., 2003). In studies of seniors with memory problems or dementia-related disease, the application of vinpocetine produced...
improvements in attention, concentration and memory.

Hershel Toomim, a long-time pioneer in the field of neurofeedback (NF), has examined the role of cerebral blood flow in brain regulation and attentional disorders (Toomim & Toomim, 1999). He has been using a technique called hemo-encephalography (HEG), which measures the perfusion of cerebral blood flow, and has observed decreases in frontal blood flow in ADD children during reading. By translating the HEG measures into auditory biofeedback, Toomim has been able to train such children to increase CBF. He reports results greater than those of traditional NF. Because of the cerebral blood connection between HEG and AVE, Toomim (2001) analysed six well respected NF studies (studies with ADD children) and found that the Joyce study, while treating ten children simultaneously, showed better overall improvement on the TOVA than had NF conducted one child at a time (Figure 7).

Several studies have been completed showing the comparison between peak alpha frequency and intelligence. In 1996, Anoukhin and Vogel observed 101 healthy males ranging from 20 - 45 years of age. They discovered that those who scored well on the Raven’s IQ tests had a scant 1 Hz faster alpha rhythm than did the poor performers. In 1971, Oloffson reported that healthy human alpha production was in the range of 9.3 - 11.1 Hz. A 1990 study by Markand showed that a dominant alpha frequency of 8.5 Hz or lower reflected a state of mental dysfunction. Other studies by various research teams; Vogt, Klimesh and Doppelmayr (1998), Jausovec (1996), Giannitrapini (1969) showed a distinctive relationship between mental performance and peak alpha frequency. Roughly speaking, peak alpha production of less than approximately 10 Hz can be associated with poorer than average academic performance while dominant alpha production higher than 10 Hz is associated with better than average academic performance.

The above findings prompted Budzynski and Tang (1998) to conduct a “peak alpha” experiment with AVE. Fifteen minutes of photic stimulation at 14 Hz was given to 14 people. Peak alpha frequency was found to increase following the cessation of photic stimulation. The pre-stimulation dominant alpha average frequency was 9.78 Hz, which continually increased to 10.38 Hz, 20 minutes post stimulation (the latest measure taken).

**Budzynski Study Using AVE to Improve Cognition and Academic Performance in College Students**

Tom Budzynski and colleagues (1999) further divided the typical alpha band (8 - 13 Hz) into three separate bands. Band “A1” represented 7-9 Hz, “A2”, 9-11 Hz, and “A3”, 11-13 Hz. They then examined the A3/A1 ratio. If, for example, there was 15 uv of A3 activity and 12 uv of A1 activity, the ratio would be A3/A1 = 1.25. Based on previous findings, a ratio exceeding “1” was considered to equate with better than average mental performance, while a score below “1” equated with poorer than average mental performance.

A group of struggling college students (n=8), defined as those receiving tutoring, attending the Western Washington University, were chosen for the study. EEGs were collected and the A1/A3 ratios were calculated while the students were attending to a variety of mental tasks. As shown in Figure 8, average alpha slowing (as indicated by the negative ratio) was apparent across all measures and in particular alpha slowing was most apparent during the Digit Span task. This task requires remembering progressively longer strings of numbers until they can no longer be remembered. Following 30 sessions of repeating cycles of 14 and 22 Hz AVE, mean alpha frequency (positive ratio) increased. The positive alpha ratio continued across all tasks, indicating heightened mental performance (a reversal of the control group).

The 30 AVE sessions were completed in the Fall of 1997 and the students’ marks from their spring exams were recorded and compared against a control group (Figure 9). Notice the AVE group showed improvement in grade-point average (GPA) over the course of the year while the controls showed a decrease in GPA. This study demonstrates that the carry-over effect following the cessation of AVE treatment continued for at least five months.
Comparing AVE with Psycho-stimulants in the Treatment of ADHD in Children

This study by Lawrence Micheletti is unique in that it compares outcomes of an AVE group with a Ritalin/Adderall group, and with an AVE and stimulant combined group (total N = 99). A control group was also included in the study. The demographics are as follows:

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>31</td>
</tr>
<tr>
<td>Stimulant (Ritalin &amp; Adderall) Group</td>
<td>20</td>
</tr>
<tr>
<td>AVE Group</td>
<td>21</td>
</tr>
<tr>
<td>Combined AVE &amp; Stimulant Group</td>
<td>27</td>
</tr>
</tbody>
</table>

Testing was done just prior to treatment (pre), immediately following (post) and after four weeks (post-post). I.Q. was tested on the Wide Range Achievement Test (WRAT), Peabody Picture Vocabulary Test (PPVP) and Raven’s Progressive Matrices (Raven). The children received a 20 minute session, five days a week for a total of 40 sessions. The first training session was administered by the researcher while the remaining 39 sessions were completed at home and were supervised and recorded by a parent or legal guardian.

The AVE unit was programmed to begin with both auditory and visual stimulation at 10 Hz for two minutes and at that time visual stimulation would cease and only auditory stimulation would continue for one minute. After the auditory only stimulation, the AVE unit would switch to both auditory and visual stimulation at 18 Hz for two minutes. The children experienced four complete cycles (five minutes per cycle) for the completion of a 20-minute training session. Absolute measures were taken, but for the purpose of this article, only the comparative data between the controls, the Ritalin Group, the AVE Group and the Combined AVE & Stimulant Group are shown (Figure 10).

New Visions School Neurotechnology Replication Project

In 2001, Michael Joyce, at the New Visions School (A Chance To Grow), a charter school in Minneapolis specializing in special needs children (attentional and behavioral) completed the largest AVE study to date. This study substantiated previous work in schools in Minneapolis and Perham, MN, and in Yonkers, NY. The study illustrated that the public school setting is an ideal environment for conducting AVE training, particularly for low-income inner city and rural families who typically do not have access to such training. This study involved the efforts of seven Minnesota public schools (five elementary, one middle, and one K-12) with the majority of elementary age. This study employed AVE to address the inattention, impulsiveness and behavioral challenges in school-age children, thus reducing the need for medication management of these children and reducing the educational resources that are devoted to responding to their disabilities.

Students selected had a history of learning and reading challenges, impulsiveness, and a propensity to be distracted and to distract others. The students were selected by an ongoing, dynamic evaluation process based upon referrals from classroom teachers, parents, special education staff, and/or other concerned people in the student’s life. Parents and teachers completed a behavior rating scale, while the students completed a standardized reading inventory.

Apparatus

The AVE device used was the DAVID Paradise XL (manufactured by Mind Alive Inc, Edmonton, Alberta, Canada). The eyesets used in the study were field independent, in that they are able to independently stimulate the individual left and right visual fields of each eye thus producing a different frequency in each hemisphere of the brain.

At two schools, the DAVID Paradise XL was attached to a multi-user amplifier, which enabled up to ten students to receive treatment simultaneously (Figure 13). Each student had his/her own station, which consisted of a set of headphones and an eyeset. The students could control both the audio volume and the light intensity. The students preferred brighter intensities, between approximately 400 and 600 lux (full spectrum) measured approximately 0.3 inches from the eye set screen (approximating their average eye distance from the screen).

Students participated in two or three AVE sessions (20-30 minutes) per week, averaging nearly 30 sessions over a period of three months. Some students with severe impairments underwent
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daily sessions. The training was part of the student’s regular curriculum, scheduled around other activities. Training was accomplished using protocols established by the foremost clinicians and researchers in the field, modified to reflect New Visions’ experience working within the school environment.

Results

Pre- and post-intervention data was obtained using direct assessment and behavior rating scales completed by both parents and teachers. Behavioral and personality ratings were obtained via the BDS, both the home and school versions and normed to a value of “10” (Figure 11). Oral reading proficiency was assessed with the Slosson-R reading test. Students showed reductions in anxiousness, depression, hyperactivity and inattention. On average, students gained eight months (p<.001) in grade-equivalent oral reading scores (Figure 12).

Shown below in Figure 13 is Michael Joyce’s storage box containing the AVE Multiple System. Michael’s box has an audio-mixer that “mixes” a microphone and CD player into the multiple system for the children to hear. These storage systems, which are used throughout several schools are on wheels so that they may be easily transported throughout the schools for use in different classrooms.

Conclusion

Several studies show that AVE is a useful tool for treating attentional disorders. The frequencies used in its operation are similar to those frequencies used with common NF techniques. As added bonuses, the ability to have pre-programmed sessions makes AVE useable by people not skilled in NF, such as teachers and parents. A single clinician may also treat several children at one time, thus drastically cutting costs. The results include many behavioral improvements in addition to the primary attentional concerns.

References


Continued on page 34
A Story of Inspiration: Lance Armstrong

Jeffrey T. Leonards, PhD

Editor's Introduction: Optimal performance is not just one application area for biofeedback. Rather it is an essential theme in all of biofeedback research and practice. Since the early pioneering work of Barbara Brown and Neal Miller biofeedback professionals have tested the envelope of human potential. Can human beings control muscle function? Can human beings learn to redirect visceral organs? Can human beings tap higher levels of brain potential for creativity and learning? In this editorial, Jeffrey Leonards gives a tribute to the inspirational determination of Lance Armstrong to push past illness and adversity to reach heroic levels of achievement in sport.

[Donald Moss, Ed.]

The summer is almost over, and so too is what for many was a long-awaited Tour de France (TDF). On July 27th, the three-week bicycling odyssey came to a smashing conclusion in Paris as Lance Armstrong edged-out his nearest rival by a scant 61 seconds. This 100th anniversary of le Tour was nothing short of epic, and not just in the annals of bike-racing nor even sport in general. It was one of those events that for spectators occurs maybe once or twice in a lifetime. This event saw a cancer survivor, an American no less, vying for a record lifetime. This event saw a cancer survivor, an American no less, vying for a record...
pounds lighter, and needing hours of IV fluids prior to the next day’s race. His bid for a record-tying 5th TDF win was clearly slipping away.

And Stage 15 would unfold yet another disaster, one so profound that Armstrong himself, the unflappable optimist, began thinking his Tour was over. Having been challenged relentlessly on the Tourmalet climb by historical rival Jan Ullrich, Armstrong, known as a master tactician, waited until the final ascent of Luz Ardiden to launch his desperate attack. Only moments into this virtually do-or-die situation, fate inexplicably entangled a spectator in his handlebars, flipping Lance head-over-heels onto the pavement. Bruised and battered, he attempted to catch the lead group when horrendously his cleat slipped out of the pedal, wish-boning him on his top tube and again losing him invaluable seconds.

Then it happened. With adrenalin now flowing like a burst water main, Armstrong was for the first time in two weeks really out of his saddle, that trademark look of utter determination defining his face. Call it what you will, anger, desperation, whatever it was, Lance Armstrong was powering his bike up that infernal mountain with the panache of a warrior leading a cavalry charge. For many fans, this was the moment for tears and celebration, as it was suddenly apparent that the champion of four previous Tours, a man who for days had looked truly vanquished, was not only back, but was going to win this pivotal stage, and with it perhaps the Tour itself. History will record Stage 15 as one of the more unsurpassed dramas in sport, certainly in TDF history. Armstrong took the stage with gallantry, slowing momentarily to pat the shoulder of the last overtaken cyclist just minutes before the finish line.

For years, race aficionados have mourned the passing of the padrone, a recognition of leadership paid by the peloton to a truly exceptional bicyclist, one who commands as much respect for character as for athleticism. Such deference bestowed by otherwise cutthroat riders is quite rare these days, yet Armstrong’s demeanor has earned this affection. In 1929, then-President Coolidge intoned that “nothing in the world can take the place of persistence and determination.” Charles Swindoll would later write, “life is 10% what happens to me and 90% how I react to it.” Armstrong’s gritty comeback in this year’s Tour personified both these truths, wherein lies the true magic of this year’s race. When Armstrong got out of his saddle, sweat pouring off his chin, eyes fixed on the horizon, the outcome of the race no longer really mattered. It was enough that the yellow jersey was up, staring down defeat, saying in essence “it ain’t over til it’s over.” The miracle that we witnessed in Stage 15 was “not about the bike.” It was about resolve and determination, to keep fighting no matter how apparent the outcome.

The pages of sports history are filled with heroes like Armstrong. So too are the cancer wards, where valiant combatants all-too-frequently slip tragically away, and with far less fanfare.

Severely ravaged at one time himself by cancer and chemotherapy, Armstrong wants to be remembered more as a survivor than as the biking champion he is. He is inspired by the hope he brings to cancer patients. We, on the other hand, are inspired by his fierce will to survive and to fight for everything that is meaningful.

The message is clear. We can all be Lance Armstrong. Whether it’s a bike race, a career challenge, a failing marriage, a personal loss, or even a hideous disease like cancer, the outcome is never a certainty. We have the capacity to persist, to keep struggling with every available ounce of energy, sometimes against all odds. In the end, we can’t always be victorious, as Lance himself will eventually experience. But in truth, it’s not the outcome that gives meaning anyway; it’s the struggle itself, the will to fight.

For Armstrong, there will, of course, be a sixth attempt at the maillot jaune. Whether he succeeds, though, is somewhat immaterial, for what he has given us already is far more than any could have ever asked for.
Abstract: The wide diversity of biofeedback settings has expanded beyond the medical model. Biofeedback practitioners can be found working with athletes, students, test pilots, CEOs and soldiers. BCIA has responded by moving from a supervision model to a mentoring model as a means of training those individuals seeking biofeedback certification.

Introduction

As biofeedback continues to expand, we are seeing applications of the biofeedback techniques in a wide variety of fields. Biofeedback training is being used in the schools, in athletic arenas, in performance training facilities, and in health care centers. As many of you know, we at BCIA have been working to improve the certification process so that it reflects these rapid changes.

Recently, BCIA revised the recertification policies to reflect the broader context in which biofeedback services are being provided and recognized that there may be situations in which the independent practice of biofeedback requires neither a license nor supervision under a licensed practitioner, depending on applicable law and ethical guidelines.

So too, in the area of supervision, we recognize that there is a fundamental difference between supervision for professional licensure and supervision for BCIA certification. We have had a supervision policy in the past that reflected the licensure model. Now, as more and more biofeedback practitioners move outside the “medical model” of treatment, we are adopting the mentoring/consultation model of supervision.

Why This Change Was Warranted

Training for BCIA certification is not and should not be represented as clinical supervision for either professional licensure or insurance reimbursement. These are unique and separate contractual agreements between two professionals. Rather, it is part of the basic training needed to help a new practitioner gain basic competency in the field of biofeedback.

Supervision for licensure has a number of very specific criteria which are not required in the mentoring model. For instance, in many states the supervisor must be employed by or be in contractual status with the professional setting in which the trainee is employed. In these situations, both the trainee and the supervisor share in the responsibility for the client/patient’s welfare although it is the supervisor who has the ultimate responsibility. Typically the supervisor may not accept fees, honoraria, favors or gifts from the supervisee; and often must meet with the supervisee face-to-face for two hours a week. Finally, the supervision-for-licensure model usually states that the supervisor bears the full professional responsibility for the welfare of every client/patient served.

Insurance companies often dictate who may provide reimbursable treatment. A professional must meet both degree and licensure requirements. Each insurance company has its own rules and regulations. For example, Medicare insists that a licensed supervisor be in the immediate vicinity when an assistant or trainee is providing the service. Other insurance companies insist that the supervisor be on the premises. Still other insurance policies simply stipulate that the supervisor oversee the work.

Mentoring for BCIA Certification

Many legal experts use the word “consultant” to differentiate the type of supervisory arrangement that might exist when certification is pursued. We have chosen the word “mentor”. There are some important differences between traditional supervision for licensure and consultation/mentoring for certification.

Here are the most pertinent differences:

• The mentor/consultant does not have legal responsibility for clients/patients.
• The candidate does not need to make it known to the patient/client that s/he is working with a mentor/consultant.
• The mentor/consultant may charge for services. In essence, the candidate is hiring his or her mentor/consultant for the services provided.
• The mentor/consultant need not be a qualified provider in the candidate’s specialty but must be competent in the areas in which mentoring/consultation is provided.

Conclusion

It is our hope at BCIA that more of you will enter into a rewarding and mutually beneficial mentoring experience. We hope these changes will help you in your endeavors.

References


Dr. De Bease is a BCIA board member and is chair of the mentoring committee.
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Celeste De Bease, PhD, was trained at the University of Pennsylvania in psychophysiological psychology and is certified in both general and EEG biofeedback. She worked for many years doing EEG research at Temple School of Medicine, EEG lab. She is a past president of the Pennsylvania biofeedback society and is currently on the BCIA Board. Dr. De Bease teaches graduate psychology at both Widener University and Chestnut Hill College and practices at the BioNeurofeedback Treatment Center in the Philadelphia area.

Maureen Groer, RN, PhD, FAAN, is a Professor and Associate Dean for Research and Evaluation, in the College of Nursing at the University of Tennessee, Knoxville, Tennessee. Dr. Groer is a pediatric nurse practitioner, and travels to West Africa every year for two weeks with other faculty and students to provide primary health care in Sekondi, Ghana. Her research is primarily carried out in the laboratory at the college of nursing and she teaches pathophysiology, which is an area in which she has authored 5 textbooks. She loves tennis, skiing, and her Labrador retrievers.

Duck-Hee Kang, RN, PhD, is an Associate Professor in the School of Nursing, University of Alabama, Birmingham, Alabama. After graduating from Yonsei University, Seoul, Korea, she came to the U.S. and has worked in many clinical and academic positions. She received her doctoral training in Nursing and Physiological Psychology from the University of Wisconsin-Madison and continued her postdoctoral training in psychoneuroimmunology. She has been serving as a grant review member at the National Institutes of Health and a reviewer for many professional journals. She plans to spend her sabbatical at Yonsei University College of Nursing in 2004 to advance bio-behavioral research in Korea. She wants to promote strong international collaborations on bio-behavioral research and expand her studies to include nutritional and genetic factors in the future.

Jeff Leonards, PhD, is a licensed psychologist with Evergreen Behavioral Services, a division of the Franklin County Health Network (http://www.fchn.org/) in Farmington, Maine. Through this network, Dr. Leonards coordinates behavioral medicine services including consultation to Franklin Memorial Hospital, a rural 70-bed facility where he is an affiliate member of the medical staff. Dr. Leonards is an avid athlete, participating regularly in cycling, hockey, weight training, and nordic skiing. He holds a black belt in Tae Kwon Do, is a former ski-patroller, and is current president of the Western Mountains Hockey and Skating Association.

Sharon Lewis, RN, PhD, FAAN, is a Professor of Nursing and Medicine, and the Castella Distinguished Professor at the University of Texas Health Science Center at San Antonio. She is also a Clinical Nurse Scientist at the Geriatric Research, Education, and Clinical Center at the South Texas Veterans Health Care System, San Antonio, Texas. Her research is in the area of biobehavior and immunology. Her background as a nurse with research training in basic science has aided her in bridging clinical and basic science research. Her free time is spent playing tennis, landscaping, and gardening.

Nancy McCain, RN, DSN, FAAN, is a Professor in the School of Nursing, Virginia Commonwealth University, Richmond, Virginia. She has been recognized as a nursing “pathfinder” based upon her scientific breakthroughs in psychobiological health. Supported by three NIH grants, she has developed a program of research that applies a PNI framework to test stress management interventions in persons with HIV disease, beginning with traditional relaxation approaches and now investigating alternative approaches. Her research has yielded findings that will promote psychological and immunological health in HIV disease and advance the scientific basis for HIV/AIDS nursing practice.

Gayle G. Page, RN, D.N.Sc., FAAN, is an Associate Professor and the Independence Foundation Chair in Nursing Education, at the School of Nursing, Johns Hopkins University, Baltimore, Maryland. Her clinical practice caring for infants recovering from open heart surgery has been a driving force in her efforts to demonstrate that the adequate relief of pain is not merely a matter of mercy, but one of physiologic necessity. Her newly evolving work focuses on the possible long-term physiologic consequences of the multiple pain experiences premature babies must endure by investigating the impact of early postnatal pain on immune responses to stress at maturity.

Ronald Rosenthal, PhD, is a psychologist and biofeedback provider in Miami, FL. He received his PhD in experimental psychology from New York University and worked for five years with Neal Miller. After completing a retraining program in clinical psychology, he opened a practice specializing in the rehabilitation of motor dysfunction in 1992. Ron has been active in the Biofeedback Society of Florida and in AAPB; he is currently serving as the co-chair of the AAPB insurance committee.

David Siever graduated in 1978 as an engineering technologist. He later worked in the Faculty of Dentistry at the University of Alberta designing TMJ Dysfunction related diagnostic equipment and research facilities. He organized research projects, and taught basic physiology and a TMJ diagnostics course. Dave observed anxiety issues in many patients suffering with TMJ dysfunction, prompting him to learn and practice biofeedback and design biofeedback devices. In 1984, Dave designed his first audio-visual entrainment (AVE) device-the DAVID1. Since then he has researched and refined AVE technology, specifically for use in relaxation, and treating anxiety, depression, PMS, ADD, FMS, SAD, hypertension and insomnia. He presents AVE technology applications regularly at conferences and for special interest groups.
Audio-visual Entrainment Technology – Part III

Continued from page 29


Notes

¹Address all correspondence to David Sievier at “Mind Alive” (formerly Comptronic Devices Ltd). Toll Free: 1-800-661-MIND (6463), Ph: 780-450-3729, 9008-51 Avenue, Edmonton, Alberta, Canada, T6E 5X4.

²New Vision School – A Chance to Grow (Michael Joyce). Minneapolis, MN. Ph: 612-706-5551
Biofeedback is a technique intended to teach patients self-regulation of certain physiological processes not normally considered to be under voluntary control. The technique involves the feedback of a variety of types of information not normally available to the patient, followed by a concerted effort on the part of the patient to use this feedback to help alter the physiological process in some specific way. Biofeedback has been proposed as a treatment for a variety of diseases and disorders including anxiety, headaches, hypertension, movement disorders, incontinence, pain, asthma, Raynaud's disease, and insomnia.

The type of feedback used in an intervention depends on the nature of the disease or disorder under treatment. For hypertension, blood pressure is monitored and the data reported back to the patients. For tension headaches, electromyographic (EMG) measurement of muscular contraction is used. For migraine headaches, thermal biofeedback is used. In this technique, a temperature sensor is placed on the finger, and the subject is taught to increase the temperature, an effect that is mediated through peripheral vasodilation. For fecal incontinence, EMG data are used. Data from manometric studies may also be used in biofeedback for fecal incontinence.

The application of biofeedback to the treatment of rectal incontinence differs somewhat from the general tenets of biofeedback in that the biofeedback is used to help the patient learn to control and coordinate the contraction of sphincter muscles, i.e., skeletal muscles, which are under voluntary control.

Treatment for chronic pain is often multimodal, and typically includes a component of behavioral therapy. Behavior techniques vary, but are geared toward reducing muscle tension to break the pain cycle. EMG biofeedback has been used as part of a behavioral treatment program, with the assumption that the ability to cope with stressful stimuli by attempting to alter negative thought and dysfunctional attitudes. Relaxation exercises may be part of the coping skills taught with cognitive-behavioral therapy.

Fecal incontinence in adults is the recurrent uncontrolled passage of fecal material.
Pathophysiology of the disorder ranges from abnormalities in intestinal motility (diarrhea or constipation), to poor rectal compliance, impaired rectal sensation or weak or damaged pelvic floor muscles. The incidence of fecal incontinence is about 7.0-9.5% in adults over age 65. The majority of patients (about 75%) are female; the most common causes are obstetric trauma coupled with age-related degeneration, previous anorectal surgery, rectal prolapse and perineal trauma. In many individuals, the condition is multifactorial, involving a combination of structural, physiological and psychosocial factors.

Encopresis, generally defined as incontinence of feces not due to an organic defect or illness, affects about 1.5% of children ages 4 to 12; boys are affected 4 to 5 times more than girls. More than 80% of children with encopresis have chronic constipation or fecal retention.

Organic causes of fecal incontinence or constipation include Hirschsprung’s disease, malabsorption syndromes, hypothyroidism, hypercalcemia, diabetes insipidus, or neurological conditions. Children whose fecal incontinence is due to physical abnormalities require surgery; residual incontinence is then treated by medical and behavioral interventions. Most encopresis and constipation are functional, in which structural, endocrine or metabolic disease has been ruled out in children at least 4 years of age. A contributing factor to functional encopresis and constipation is fear and/or pain associated with large, hard stools that leads to retentive posturing in about half of the children with chronic constipation (i.e., the avoidance of defection by purposefully contracting the external anal sphincter, also termed anismus or paradoxical sphincter contraction). Biofeedback training in children has been directed at training the relaxation of the external anal sphincter to reverse the abnormal defection dynamics of paradoxical contraction. Similar to adults, some children with fecal incontinence have decreased sensation of rectal fullness and weak external anal sphincter function that indicate sensory and strength-training biofeedback.

Biofeedback training for fecal incontinence focuses on improving the ability to voluntarily contract the external anal sphincter and puborectalis muscles in response to rectal filling. Specifically, biofeedback attempts to improve rectal sensory perception, strength, coordination, or some combination of these three components. Sensory training involves inducing intrarectal pressure using balloon feedback device.

**Scope**

Medical policies are systematically developed guidelines that serve as a resource for Company staff when determining coverage for specific medical procedures, drugs or devices. Coverage for medical services is subject to the limits and conditions of the member benefit plan. Members and their providers should consult the member benefit booklet or contact a customer service representative to determine whether there are any benefit limitations.

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Biofeedback may be considered **medically necessary** when used in the treatment of the following conditions:
- migraine or tension headaches;
- generalized anxiety disorder (per psychiatric assessment).

Biofeedback is considered **investigational** when used in the treatment of any other conditions, including, but not limited to:
- low back pain and chronic pain;
- hypertension;
- insomnia;
- movement disorders;
- asthma;
- Raynaud’s disease; and
- fecal incontinence in adults and children.

EEG biofeedback (also known as neurofeedback), which involves monitoring of EEG activity, is considered **investigational**.

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<tr>
<td>Benefit Application</td>
<td>Some contracts specifically exclude biofeedback. Therefore, please check contract language for benefits availability. Biofeedback benefits apply to professional services during which techniques for self-regulation of physiologic processes are taught to the patient. Biofeedback monitors/measurement devices are not eligible as DME, since they are only needed as a training device. Once the patient has learned the technique, the monitor is no longer necessary.</td>
</tr>
<tr>
<td>Rationale/Source</td>
<td>There are several methodologic difficulties in assessing biofeedback. For example, most interventions that include biofeedback are multimodal and include relaxation and behavioral instruction, which may have effects separate from any effect that may occur due to biofeedback. While studies may report a beneficial effect of multimodality treatment, without appropriate control conditions, it is impossible to isolate the specific contribution of biofeedback to the overall treatment effect. For example, relaxation, attention, or suggestion may account for the successful results that have been attributed to biofeedback. These are nonspecific therapeutic factors, some of which can be considered placebo effects. TEC assessments in 1995, 1997, and 2000 evaluated the use of biofeedback in the treatment of several different conditions: anxiety disorders, headaches, hypertension,</td>
</tr>
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</table>
Professor Desiré Dubounet and her friends have spent over 35 million dollars to bring the world a professional and thorough course on Wellness, Naturopathy and Neuro-Electro-Physiology of Biofeedback as Bioresonance.

She is such a humanitarian Angel, she lets you pay for the course videos, books and materials with Karma...

These are the **TOP FIVE REASONS** to get a Doctorate in Wellness PHD International Medical University degree at home.

1. Getting a degree means you will increase your earning potential. Studies have shown that at home study is just as good as attended classes.

2. Study and Complete Courses at Your Own Pace. Use this to maximize the learning.

3. Scheduling Convenience. Work when you are ready to work.

4. Teaching Faculty Who Actually Have Work Experience in Your Field of Study. Global faculty at IMUNE is with worldwide famous doctors.

5. Save Money on Travel, Parking, Childcare, and Books. You save money the world saves energy, this makes you and the world better.

6. Employer Support. Many employers offer tuition reimbursement for employees’ tuition associated with training in their fields. Employers also tend to encourage enrollment in online degree programs because they know employees will be able to go to school and still be able to be committed to their jobs. Don’t be afraid to ask your employer. Every company needs a wellness consultant.

Professor Desiré Dubounet the world’s most famous Naturopath and her friends have spent over 35 million dollars to bring the world a professional and thorough course on Wellness, Naturopathy and Neuro-Electro-Physiology of Biofeedback as Bioresonance. She is such a humanitarian Angel, she lets you **pay for the course videos**, books and materials **with Karma** go to www.imune.name for more information.
movement disorders, incontinence, pain, asthma, Raynaud’s disease, and insomnia.

Controlled studies of biofeedback have reported conflicting results. While there was evidence that feedback on physiological processes provides patients with an enhanced ability to control these processes, there was no consistent evidence of any relationship between a patient’s ability to exert control over the targeted physiological process and any health benefits of the intervention. This underscores the importance of seeking controlled studies showing whether the use of biofeedback improves disease-related health outcomes, as opposed to physiological, intermediate outcomes. It may well be that not all patients with a given medical condition are able to benefit from the use of biofeedback as much as are a subset of those patients, and it is not clear how to select the patients most likely to benefit from biofeedback.

A 1996 TEC assessment concluded that evidence was insufficient to demonstrate the effectiveness of biofeedback for treatment of chronic pain. The available evidence did not clearly show whether biofeedback’s effects exceeded nonspecific placebo effects. It was also unclear whether biofeedback added to the effectiveness of relaxation alone. An update of the literature appearing between 1996 and 2002 finds that the previous concerns with the evidence remain unresolved.

Regarding hypertension, two studies used the same sample of patients with mild, unmedicated essential hypertension. Investigators randomized patients to either active or true biofeedback or feedback in which systematic changes in blood pressure were partially disguised. The earlier study used a shorter overall training period and failed to show differences between groups. In contrast, the later study performed laboratory training plus 4 weeks of home training; the active group lowered blood pressure to a greater extent than placebo group patients at the end of training. While the results of the second study suggest nonspecific effects for biofeedback, it is unclear whether the partial disguising of treatments achieved effective double-blinding. It is also unclear whether blood pressure reductions are maintained over the long term.

Regarding movement disorders, 3 studies appearing since 1995 have included patients recovering from stroke and another study focused on quadriplegic patients. Bradley et al. enrolled patients who were 4-6 weeks post-stroke and randomly assigned them to physical therapy plus active EMG biofeedback or physical therapy plus EMG electrode application. The EMG machine was turned off and faced away from the patient. The authors proposed that the second group comprised placebo biofeedback, but sham feedback is a better control for nonspecific treatment effects. At follow-up, there was no difference in activities of daily living between groups. Wong et al. Selected 60 individuals with hemiplegia after stroke or traumatic brain injury. All patients had therapy using a training table device intended to improve postural symmetry by performing resistive movements against weights with their arms. Patients were randomly assigned to receive feedback about posture or no feedback. After 4 weeks of training, the feedback group had lower degrees of postural asymmetry. This study did not report outcomes such as activities of daily living, it did not address the durability of effects, and it did not include a group treated with placebo biofeedback.
Geiger et al. included 13 patients with post-stroke hemiplegia who were randomly assigned to physical therapy with or without balance biofeedback. No differences were detected between groups in balance outcome. Kohlmeyer et al. studied tenodesis grasp (thumb-index finger opposition) in 45 quadriplegics. All patients received conventional physical therapy and were randomized to 1 of 4 groups: 1) no additional treatment, 2) electrical stimulation, 3) biofeedback, or 4) electrical stimulation plus biofeedback. A blinded evaluator found that additional treatment did not improve manual muscle performance or activities of daily living relative to physical therapy alone. Together, these 4 studies do not alter the conclusions of the 1995 TEC Assessment that evidence is lacking to show that biofeedback is effective for treating movement disorders. Studies either failed to show any beneficial impact of biofeedback or had design flaws that leave the durability of effects in question or create uncertainty about the contribution of nonspecific factors such as attention or placebo effects.

The Raynaud’s Treatment Study Investigators conducted a randomized comparison of sustained-release nifedipine and thermal biofeedback in 313 patients with primary Raynaud’s disease. In addition to these 2 treatment groups, there were 2 control treatments: pill placebo and EMG biofeedback. EMG biofeedback was chosen as a control because it did not address the physiological mechanism of Raynaud’s disease. Nifedipine significantly reduced Raynaud’s attacks compared with placebo, but thermal biofeedback did not differ from EMG biofeedback. Better outcome for nifedipine relative to thermal biofeedback was nearly significant. With a larger sample size, the relate of 56^ fewer attacks with nifedipine relative to thermal biofeedback would likely be statistically significant. Thus, it cannot be concluded that thermal biofeedback is as effective as this form of medical therapy.

Medicare

The Medicare Coverage Advisory Committee (MCAC), Medical/Surgical Procedures Panel, evaluated the effectiveness of biofeedback for urinary incontinence in April 2000. Based strictly on the scientific evidence, the Panel concluded that it is not clear that biofeedback adds clinical benefit above and beyond PME alone for stress, urge, or post-prostatectomy incontinence. However, a group that is anecdotally reported to benefit from biofeedback-assisted PME is women who are not able to voluntarily contract their pelvic floor muscles or who fail PME alone, but no reports support this hypothesis. While limited direct empirical evidence was available on whether biofeedback improves outcomes in patients who have failed PME or are unable to perform PME, the Centers for Medicare and Medicaid Services (CMS) felt that coverage was warranted, given the combination of suggestive scientific evidence and broad positive expert testimony.

The reviews of biofeedback for adults and children point out several methodological problems in the literature:

1. Lack of uniform criteria for patient inclusion. Some studies include only chronic constipation patients, some only encopresis, and some constipation with encopresis. Studies will often fail to specify the characteristics of the population and the subgroups with different symptoms and diseases. Additionally, patients with weak
pelvic floor muscles and normal rectal sensation may only need strength training and patients with normal pelvic floor muscle strength and poor rectal sensation may only need sensory or coordination training. Most studies do not identify and report the cause of incontinence.

2. Lack of standardized criteria for assessing outcome. Studies report cure rates and improvement rates but the outcomes and methods underlying their measurement varies across studies. The criterion for success has ranged arbitrarily from 25% to 90% reduction in episodes across studies.

3. Diversity among treatment protocols. In their review of 34 studies, Norton and Kamm noted that no two studies have described exactly the same treatment as biofeedback.

4. Lack of randomized controlled trials (RCT). Most studies are uncontrolled observational studies of patients who undergo biofeedback treatment. Non-randomized controlled trials are subject to selection bias when patients chose which intervention group they will join.

5. Small sample size and lack of statistic power. Small samples limit detection of small-to-moderate effect sizes and eliminate the opportunity for separate subgroup analysis.

6. Short follow-up period. Outcomes for most studies are end of treatment or 6 months; studies rarely follow-up for 2 or more years.

7. Lack of validated outcome measures. Diary, questionnaire, and interview methods are used to assess patient symptoms; the field has not conducted reliability and validity psychometric studies to standardize their operational definitions and methodological procedures.

8. Nonspecific treatment effects. Biofeedback treatment is often performed concurrent with adjunctive therapy, including use of medication, diet modification, home instruction, and a home exercise program. In addition, critical factors to success may have more to do with contributions by therapist attention, psychological support, social and psychological counseling for anxiety and confidence, patient education, dietary assessment and advice, medication and lifestyle (e.g., pelvic floor muscle or sphincter exercise) changes, and patients motivation than the biofeedback.

2004 Update

A literature search of the MEDLINE database, performed for the period of 2003 through April 2004, did not identify any additional controlled trials that would address the limitations noted above. Therefore, the policy statement is unchanged. Aksac and colleagues reported the results of a trial that randomized 50 patients with stress incontinence to 1 of 3 groups: self-directed PME, biofeedback directed PME, or no treatment. Outcomes were assessed with pad tests, perineometry, and pelvic floor muscle strength as assessed by digital palpation. The first 2 groups had a significant improvement in outcomes compared to the control (no treatment) group. The biofeedback group had an increased strength in the pelvic floor muscles compared to those with self-directed PME, but the clinical significance of this difference is unclear. Two trials investigated the role of biofeedback in post-prostatectomy patients. In a
randomized trial, Wille and colleagues reported that the addition of biofeedback did not improve the outcomes compared to PME alone. Parekh and colleagues examined the role of biofeedback enhanced PME offered both pre- and postoperatively to post-prostatectomy patients. Since this trial did not include PME alone, the contribution of biofeedback cannot be isolated.

2005 Update

A review of the peer-reviewed literature in MEDLINE for the period of August 2002 through July 2005 found no new clinical trials to change the above conclusions. It is noted that there are indications other than those listed here for which biofeedback is being evaluated including hand hemiplegia, facial palsy, low vision, cardiovascular disorders, chronic obstructive pulmonary disease and epilepsy. However, there are no clinical trial publications sufficient to demonstrate the effectiveness of biofeedback in these other indications. In a meta-analysis on biofeedback in hypertension, Nakao and colleagues found that biofeedback was effective in lowering systolic and diastolic blood pressure but only when the biofeedback was combined with relaxation techniques. (9) The authors noted further that study is needed to determine if biofeedback has any blood pressure lowering effect without relaxation techniques. Therefore, the policy statement is unchanged.

2006 Update

A review of the peer-reviewed literature in PubMed for the period of July 2005 through July 2006 found no new clinical trials to change the policy for adults. Therefore, the policy statement will remain unchanged. There was one small trial reported by Blanco et al on 34 children at 8 years of age which evaluated the efficacy of biofeedback therapy in children with urinary incontinence refractory to conventional treatment (bladder training and/or anticholinergics). Fifteen patients achieved total continence and 7 responded partially. The authors concluded that pelvic floor muscle training with biofeedback was an effective method.

In an RCT of only 23 female patients, Iknyckyj and colleagues found no evidence biofeedback with education improved fecal continence over pelvic exercises with education. Additionally, a Cochrane review found no evidence biofeedback training improved fecal continence in children over conventional treatment. Therefore, the policy statement is unchanged.

2007 Update

A meta-analysis of 55 studies (including randomized, pre-post, and uncontrolled) reported a medium effect size of 0.58 (pooled outcome of all available headache variables) for treatment of migraine. (10) Effect sizes for the 39 controlled trials were computed using Hedges’ g, which refers to the mean difference between the experimental and control groups divided by the pooled standard deviation. This analysis is limited by the inclusion of studies of poor methodological quality.

Another meta-analysis assessed psychological treatments of recurrent tension headache or migraine in children. (11) Three studies were included that compared relaxation
combined with biofeedback versus relaxation training alone. Generally small standardized effect sizes (0, 0.5, and 0.25) were reported from the 3 studies for the addition of biofeedback on headache symptoms (frequency, intensity and duration of headache). Small standardized effect sizes were also reported for clinically significant changes (> 50% reduction) in headache symptoms (0.20, 0.34, and 0). A recent systematic review of non-pharmacological treatments for migraine also concluded that the current literature does not show clear effectiveness of biofeedback for migraine in children. (12) Evidence remains insufficient to support a change in the policy statement.

A Cochrane review assessing EMG biofeedback for the recovery of motor function after stroke; 13 randomized or quasi-randomized studies were included. The authors did not find support for EMG biofeedback to improve motor power, functional recovery, or gait quality when compared to physiotherapy alone, although the results were limited due to small, poorly designed trials.

One small randomized study (n = 57) examined changes in sleep bruxism following treatment with a cognitive behavioral therapy program consisting of problem-solving, progressive muscle relaxation, nocturnal biofeedback, and training of recreation and enjoyment. Similar improvements were observed for the occlusal splint group as for the multi-component cognitive behavioral program. As discussed above, biofeedback is frequently used as one component of a relaxation program and the specific contribution of biofeedback is unclear. A systematic review of therapies for temporomandibular joint (TMJ) disorders grouped interventions into 3 categories (exercise, electrotherapy, and biofeedback). (14) Due to the heterogeneous and frequently multiple interventions used in the reviewed studies, no conclusions could be reached for biofeedback alone without other relaxation techniques. Another systematic review concluded (from 2 low-quality randomized controlled trials) that biofeedback did not reduce pain more than relaxation or occlusal splint therapy for TMJ, but did improve oral opening when compared with occlusal splints. (15) There is a lack of randomized controlled trials in this area, and questions remain about the contribution of biofeedback to improvements in health outcomes. Therefore, the policy statement is unchanged.

**2008 Update**

A search of the PubMed database was performed for the period of July 2007 through May 2008 and no evidence was identified that would alter the conclusions; the policy statement is unchanged.

**Fecal incontinence**

An updated Cochrane review of randomized or quasi-randomized controlled trials did not find evidence that biofeedback enhanced the outcome of treatment compared to other conservative management methods. The authors noted a suggestion that some particular elements of biofeedback and sphincter exercises may have a therapeutic effect, but that larger well-designed trials are needed to enable safe conclusions.
## References:


4. 1995 TEC Assessment; Tab 25, Biofeedback


15. Raynaud’s Treatment Study Investigators. Comparison of sustained-release nifedipine and temperature biofeedback for treatment of primary Raynaud phenomenon. Results from a randomized clinical trial with 1-year follow-up. *Arch
10

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**Policy:** CP.MP.PR.2.01.504*

This policy was last updated: August 11, 2009

*Medicare has a policy.

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<td>Biofeedback training by any modality.</td>
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<td>Biofeedback training, perineal muscles, anorectal, or urethral sphincter, including EMG and/or manometry.</td>
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| HCPCS           | E0746 | Electromyography (EMG), biofeedback device |

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Neurofeedback may be conceptualized as a type of biofeedback that uses the electroencephalogram (EEG) as a source of feedback data. Neurofeedback differs from traditional forms of biofeedback in that the information fed back to the patient (i.e., EEG tracings) is a direct measure of global neuronal activity or brain state, compared to feedback of the centrally regulated physiological processes such as tension of specific muscle groups or skin temperature. The patient may be trained to either increase or decrease the prevalence, amplitude or frequency of specified EEG waveforms (e.g., alpha, beta, theta waves), depending on the changes in brain function associated with the particular disorder. It has been proposed that training of slow cortical potentials can regulate cortical excitability, and that using the EEG as a measure of CNS functioning can help train patients to modify or control their abnormal brain activity.

Neurofeedback is being explored for the treatment of a variety of disorders including attention deficit/hyperactivity disorder (ADHD), learning disabilities, traumatic brain injury, seizure disorders, substance abuse-related disorders, menopausal hot flashes, panic and anxiety disorders, fibromyalgia, tinnitus, substance abuse, depression, stress management, or sleep disorders. Two training protocols, training of slow cortical potentials (SCPs) and theta/beta training, are typically used in children with ADHD. For training of SCPs, surface-negative SCPs and surface-positive SCPs are generated over the sensorimotor cortex. Negative SCPs reflect increased excitation and occur during states of behavioral or cognitive preparation, while positive SCPs are thought to indicate reduction of cortical excitation of the underlying neural networks and appear during behavioral inhibition. In theta/beta training, the goal is to decrease activity in the EEG theta band (4-8 hertz [Hz]) and increase activity in the EEG beta band (13-20 Hz), corresponding to an alert and focused but relaxed state. Alpha-theta neurofeedback is typically used in studies on substance abuse.
Policy: Neurofeedback is considered investigational.

Policy Guidelines
N/A

Benefit Application
N/A

Rationale/Source
This policy was originally based on a 1997 TEC Assessment (1), which concluded that there were inadequate data to permit conclusions regarding the health outcome effects of neurofeedback for any indication. Among the 19 studies reviewed in the TEC Assessment, few were randomized controlled trials and those that were did not support the efficacy of neurofeedback in improving health outcomes. In addition, even among the randomized clinical trials, only 2 studies used appropriate control conditions. A literature update for the period between 1998 and October 2004 identified few relevant articles. (2-6) Literature review updates using the MEDLINE database, performed in June 2006, August 2007, and May 2009, indicate increasing interest in neurofeedback for a variety of conditions, although the scientific literature appears to be the most advanced for attention deficit/hyperactivity disorder (ADHD). (7) Relevant randomized or quasi-randomized controlled trials of neurofeedback are described here.

Literature Review

Attention Deficit Hyperactivity Disorder
A 2005 review/meta-analysis used criteria from the Association for Applied Psychophysiology and Biofeedback (AAPB) and the International Society for Neuronal Regulation (ISNR) to assess the clinical efficacy of neurofeedback for ADHD. (8) The authors concluded that neurofeedback for ADHD was ranked at level 3 or "probably efficacious" on a scale of 1 to 5, 1 being not empirically supported and 5 being efficacious and specific. The authors noted that benefits were reported in the 5 randomized group studies (totaling 214 patients) included in their analysis; however, the ranking for neurofeedback for ADHD was based on the need for further studies controlled for patient and therapist factors that could unduly influence outcomes.

A study published in 2006 examined brain activity following neurofeedback in 15 children with ADHD. (9) The experimental subjects learned to inhibit the amplitude of theta waves (4–7 Hz) and increase amplitude of beta waves (15–18 Hz). Five children with ADHD were randomized to a non-treatment control condition. Functional magnetic resonance imaging revealed increased activation of the right anterior cingulate cortex, an area related to selective attention that previously was shown to be altered in children with ADHD. However, it could not be determined whether the change in brain function was related to the specific neural training program (decreasing the amplitude of theta waves...
and increasing the amplitude of beta waves) or to the additional attentional training received by the experimental group. A 2007 report from Europe compared neurofeedback training of slow cortical potentials (n=17) with a control group (n=13) who participated in a group cognitive/behavior training program. (10) The report stated that randomization was incomplete, because the age range in the group program had to be small, parents had to be available for intense training during neurofeedback, and some parents had a preference for one type of training. Results showed that children in the neurofeedback group improved more than children who had participated in a group therapy program, particularly for attention and cognition. However, parental support was found to account for more of the improvement than neurofeedback training performance.

To control for nonspecific effects (attention training) and confounding variables (parental engagement), Gevensleben and colleagues compared neurofeedback with a control intervention of participation in a computerized attention skills training in a European study. (11) All children were drug-naive or drug-free without concurring psychotherapy for at least 6 weeks before starting training. The two training conditions were designed to be as similar as possible, using computer games, positive reinforcement by a trainer, homework, and parental encouragement in using the skills/strategies learned during training in real-life situations. Both groups participated in two blocks of 9 sessions (about 100 minutes per session plus a break), with 2–3 sessions per week, and parents were informed that both treatments were expected to be beneficial, but were not informed as to which type of training their child had been assigned. A total of 102 children were randomized in a 3:2 ratio; 8 children were excluded due to need for medical treatment, or non-compliance with the study protocol by either the children or their parents, resulting in 59 children in neurofeedback and 35 in attention training (92% follow-up). SCP and theta/beta training were compared by starting with one type of training in the first block and then the other (counterbalanced order) in the second block. Investigator evaluations were performed by the teachers, and were thus not blinded to the treatment. At the end of training/testing, there were no significant differences in parents’ attitude toward the two training conditions or in the perceived motivation of their children. About 40% of the parents either did not know which training their child had participated in or guessed the wrong group. Both parents and teachers rated the neurofeedback group as more improved on the hyperactivity subcomponent of a Strength and Disabilities Questionnaire (e.g., SDQ, 19% vs. 3% improved) and on a German ADHD scale (e.g., 26% vs. 9% improved). Thirty children in the neurofeedback group (52%) and 10 children in the attention training group (29%) improved more than 25% in the German ADHD scale (odds ratio: 2.68), which was the primary outcome measure. Other components of the SDQ, including emotional symptoms, conduct problems, peer problems, and prosocial behavior, were not different between the two training conditions. No significant differences were noted between the two neurofeedback training protocols. Results of this randomized controlled study suggested that neurofeedback may have specific effects on attention and hyperactivity beyond those achieved by attention training and parental involvement. The authors concluded that future studies should further address the specificity of effects and how to optimize the benefit of neurofeedback as a treatment module for ADHD. Information on the durability of the
Substance Abuse

In a controlled study of 120 substance abuse patients being treated on an inpatient basis reported in 2005, Scott et al concluded that patients randomized to neurofeedback had better rates of drug abstinence at 1-year follow-up and remained in treatment longer than patients given additional treatment time equal to time spent in neurofeedback sessions (77% vs. 44%, and an average of 135 days vs. 101 days p <0.005). (12) After 46 treatment days, the authors also reported that the Test of Variables of Attention (TOVA) significantly improved and that 5 of 10 scales of the Minnesota Multiphasic Personality Inventory-2 significantly differed in a positive manner in the neurofeedback group. While the authors indicated that the patients and testers were blind to group assignment for TOVA and MMPI testing, it is not clear how patients could be kept unaware of their assigned treatment groups while living in a residential treatment facility. In addition, the authors do not describe the additional treatment given to the control group. These factors of blinding and additional treatment could confound outcomes. Moreover, abstinence was not confirmed by urine or serum testing.

A 2008 systematic review of neurofeedback as a treatment for substance abuse disorders described difficulties in assessing the efficacy of this and other substance abuse treatments, including the lack of clearly established outcome measures, differing effects of the various drugs, presence of comorbid conditions, absence of a gold standard treatment, and use as an add-on to other behavioral treatment regimens. (13) The authors concluded that alpha-theta training, when combined with an inpatient rehabilitation program for alcohol dependency or stimulant abuse, would be classified as level 3 or “probably efficacious”. This level is based on beneficial effects shown in multiple observational studies, clinical studies, wait-list control studies, or within-subject or between-subject replication studies. The authors also noted that few large-scale studies of neurofeedback in addictive disorders have been reported, and a shortcoming of the evidence for alpha-theta training is that it has not been shown to be superior to sham treatment.

Cognitive Performance

One small (n=6) quasi-randomized, double-blind pilot study examined whether increasing peak alpha frequency would improve cognitive performance in older adults (70–78 years of age). (14) Control subjects were trained to increase alpha amplitude or shown playback of one of the experimental subject’s sessions. Compared to controls, the experimental group showed improvements in speed of processing for 2 of 3 cognitive tasks (Stroop, Go/No-Go) and executive function in 2 tasks (Go/No-Go, n-back); other functional measures, such as memory, were decreased relative to controls.

Relaxation

A randomized controlled trial on neurofeedback for relaxation conducted by Egner and colleagues found that alpha-theta feedback resulted in greater theta/alpha ratios, as compared to mock feedback suggesting enhanced relaxation. (15) However, there was no difference in subjective reports as both groups reported significantly lower levels of treatment effect is also lacking.
Summary
The scientific evidence does not permit conclusions concerning the effect of the technology on health outcomes; a number of questions regarding clinical efficacy remain to be answered before applying neurofeedback techniques to patients with ADHD or substance abuse disorder. Neurofeedback is considered to be investigational; therefore, the policy statement remains unchanged.

Technology Assessments, Guidelines and Position Statements
The American Psychological Association (APA) provides general information on biofeedback (including neurofeedback) on their Web site “APA Online,” stating that “Biofeedback helps treat some illness, may boost performance, helps people relax and is even used to help children with Attention Deficit-Hyperactivity Disorder.” (16) A link to the Association for Applied Psychophysiology & Biofeedback (AAPB) is also provided. (17) The AAPB rates neurofeedback as efficacious (level 4 on a scale of 1–5 with 5 being the best) for ADHD, based on several small controlled and moderately large clinical studies showing that neurofeedback significantly helps children with ADHD who have problems with mathematics.

Guidelines on ADHD from the American Academy of Child and Adolescent Psychiatry in 2007 do not mention neurofeedback. (18)

The American Psychiatric Association’s 2006 guidelines on the treatment of panic disorder and substance abuse do not address neurofeedback. (19) No information on neurofeedback was identified on the Web site of the American Psychiatric Association.

No information on neurofeedback was identified on the ADHD site of the American Academy of Pediatrics. (20)

References:
1. 1997 TEC Assessment; Tab 21, Neurofeedback
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<tr>
<th>Codes</th>
<th>Number</th>
<th>Description</th>
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<tr>
<td>CPT</td>
<td>90875</td>
<td>Individual psychophysiological therapy incorporating biofeedback training by an modality (face-to-face with the patient), with psychotherapy</td>
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<tr>
<td></td>
<td>90876</td>
<td>Approximately 45-50 minutes</td>
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<tr>
<td></td>
<td>90901</td>
<td>Biofeedback training by any modality</td>
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<tr>
<td>ICD-9 Procedure</td>
<td>94.39</td>
<td>Other individual psychotherapy (includes biofeedback)</td>
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<td>ICD-9 Diagnosis</td>
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<td>HCPCS</td>
<td>E0746</td>
<td>Electromyography (EMG), biofeedback device</td>
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<tr>
<td>Place of Service</td>
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Great Spirits get Incredible Resistance from Mediocre Minds

Small Petty Minds hate to see a Powerful Alive and Free Intellect.

Small Minds often become bureaucrats so they can compensate for their insecurities.

They hate thinking big words like holistic, international, freedom the powers of the mind, the powers of the spirit.

These concepts scare them and they use every rationalization technique available to deny, twist, detract, divert, degrade, and discourage all from thinking big.

Their favorite technique is to shoot the messenger.

Desiré has proven the powers of the mind, the failure of synthetic drugs and many many more false beliefs.
Here is an article from the FDA wanting you the therapists to do clinical research. If you have an idea of what your SCIO has done to help your patients here is your chance to prove it to the world. You can write up a case study on a patient and submit it to us for publication. You might get approved to present it at our world congress in Budapest. But if you want to do a proper study here is your chance.

The FDA is helping people to do Investigator Sponsored Trials, known as IST. The following article is from an FDA approved journal on compliance. We have the proper Institutional Review Board, we have a study protocol for you to work with or amend for your needs, and we have the medical supervision. We have all you need. You just need an idea, some patients, and the dedication to see it thru. If you can finish a full 20 patient dbl blind study you can get a refurbished SCIO from the sponsor Maitreya / SCIO USA. So think this is your chance to get your name on a study and show the world what you are doing. We can do it together.

Prof. Desiré Dubounet
Investigator-sponsored Trials

Thousands of clinical trials are conducted each year around the world. They are sponsored or funded by a variety of organizations such as medical institutions, foundations, voluntary groups and pharmaceutical companies, in addition to federal agencies such as the National Institutes of Health and the Departments of Defense and Veterans Affairs. In addition, some clinical trials, sponsored by individual physicians, are called investigator-sponsored trials (ISTs).

ISTs are like other clinical trials, except that they are mostly single-center studies with an individual physician acting as both the lead investigator and the sponsor. As a result, ISTs tend to be minimally funded. However, if the drug or medical device under investigation in the trial is already available commercially (perhaps for another indication or population), the investigator will often try to engage the manufacturer to obtain some form of funding (e.g., donating the drug or medical device). Data generated through ISTs are often published and contribute significantly to academic research that in turn is referenced and utilized by other treating physicians and entities involved in the disease area or condition. Ownership of the products being investigated in the ISTs remains with the patent holder or manufacturer. Therefore, if the investigator is not the patent holder, he may neither submit the data from ISTs to a regulatory authority nor obtain approval to market the product. The investigator will need to work with the patent holder to obtain the rights to the product and it may be necessary to license the product to a manufacturer to secure the funding needed for the resources required for product approval. Data from ISTs are accepted by many regulatory authorities to support marketing applications or supplements as long as the trials were conducted in strict conformance Good Clinical Practice guidelines and the regulatory authority has access to uninterpreted data from the trial.

ISTs are held to the same regulatory standards as all trials involving human subjects. Investigators who sponsor and/or participate in clinical trials have serious responsibilities because of the involvement of human subjects and their risks in participating. There are many regulations specifying the responsibilities of sponsors and investigators. Investigators who are both sponsors and investigators (investigator-sponsors) of clinical trials must shoulder both sets of responsibilities and become very familiar with all applicable laws and regulations surrounding the conduct of human studies to ensure compliance. In the US, the Code of Federal Regulations (21 CFR Part 312 Subpart D for drugs and biologics and Part 812 Subparts C and E for medical devices) describes these serious responsibilities for both the sponsor (21 CFR 312.50) and the investigator (21 CFR 312.60). Additional responsibilities and requirements are described throughout 21 CFR 312 and 812; those specifically relating to informed consent and IRB approval are described in 21 CFR Parts 50 (Protection of Human Subjects) and 56 (IRBs), respectively. The specific responsibilities for sponsors and investigators in drug and biologic clinical trials are similar but not identical to those for sponsors and investigators in trials for medical devices.

Investigator-sponsors must determine whether an Investigational New Drug application (IND or Investigator IND) must be submitted to the US Food and Drug Administration (FDA) before beginning the trial. An IND is usually required if the study involves an unapproved product or an approved product for a new indication, or evaluation of an approved product in a new patient population. The IND must include all
the information specified in 21 CFR 312.23. To complete the IND, the investigator-sponsor usually seeks permission from the original product manufacturer to cross-reference the company’s IND or Investigational Device Exemption, or approved New Drug Application or Premarket Application to obtain the necessary information (e.g., data from animal studies and previous human studies and manufacturing information). By submitting an IND, the investigator assumes responsibility for providing all necessary information (such as the study protocol, adverse event information, annual reports, etc.) to FDA to maintain compliance with regulations. It remains the investigator’s responsibility to determine whether the study is exempt from the requirement to submit an IND. FDA generally does not accept INDs it considers exempt (see 21 CFR 312.2(b)(1) for criteria that exempt studies from IND regulations).

Table 1 lists some common reasons why investigators sponsor clinical trials in spite of the tremendous regulatory burden such studies entail. A key challenge investigator-sponsors face is the large amount of time they must dedicate to the study and how that impacts caring for patients in their medical practices. The investigator-sponsor must supervise the trial, interact with the IRB, develop budgets, deal with audits and inspections and travel as needed. Well-qualified, experienced, trained and efficient personnel (in particular the study coordinator, but also including the sub-investigators, research nurses and laboratory personnel) become essential to the investigator in managing the trial workload.

Investigator-sponsors who take the time at the beginning of the trial to train any noncertified personnel in the International Conference On Harmonization (ICH) guideline, Good Clinical Practice E6(R1) will generally save time on the back end and improve the quality of the study.

<table>
<thead>
<tr>
<th>Table 1. Advantages for Investigators In Sponsoring Clinical Studies</th>
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<tbody>
<tr>
<td>1. Patient care: Investigators can more rapidly offer their patients unapproved but promising products or</td>
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<tr>
<td>2. Scientific collaboration: ISTs allow Investigators to remain at the cutting edge of their therapeutic interests.</td>
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<tr>
<td>3. Scientific contribution: When Investigators publish the results of their studies, they enable manufacturers to</td>
</tr>
<tr>
<td>4. Professional recognition: Publications provide the Investigator with professional recognition as an expert or thought leader in the field. There is value in publishing even those studies that did not meet their primary hypotheses.</td>
</tr>
<tr>
<td>5. Funding: As the Investigator becomes well-known In the field, he is able to secure funding more easily, thereby furthering future research.</td>
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</tbody>
</table>
What's in It for the Patient?

ISTs are a very good option for patients to obtain access to new and as yet unapproved research therapies. People often participate in ISTs because they have exhausted approved treatment options that either did not work for them or produced intolerable side effects. Carefully conducted ISTs are a relatively safe and quick way to get access to products that have the potential to treat the disease or condition or that have the potential to improve patient health or quality of life. Further, since investigators are often specialists in the disease area being studied, some patients participate to gain access to expert medical care for their condition, thereby playing a more active role in their own healthcare. Still others participate in ISTs for the purely altruistic reason of wanting to contribute to the advancement of medical knowledge.

Not all patients who apply to participate in an IST will be accepted. Each patient must meet predetermined eligibility criteria, such as age, sex, type and stage of disease, previous treatment history and other medical conditions. These criteria help to reduce the amount of variation and "noise" in the study, without threatening the scientific integrity of the trial, by removing medical variations that might complicate data analyses and the ability to draw relevant and sound conclusions. Patients may also be excluded because the researcher has already enrolled the required number of participants needed to test the hypothesis stated in the study protocol.

Once subjects are selected to participate in the IST, the law requires the investigator to obtain informed consent. The investigator must provide patients with complete and accurate information about what will happen during the trial and disclose all known or suspected risks. Participants must sign a written informed consent form, which indicates they understand the trial is a research study, have been informed about the associated risks and are aware that their participation is voluntary and they can leave the clinical trial at any time. Additionally, the consent form should outline in detail the amount of time participants will have to devote to the trial and the types of activities; for example, they may need to visit the study site at specified intervals, be subjected to additional tests, get more treatments than are normally necessary, stay in the hospital and/or follow complex dosage requirements. Patients use the material in the informed consent document to decide whether or not to enter a clinical trial and to make an informed decision about the level of risk they are willing to accept before they enter the trial.

The investigator should clearly explain to participants (when applicable) that they may not receive the investigational drug and may instead receive a placebo. They should also be prepared mentally for partial or no effectiveness from the treatment. The investigators should encourage the participants to learn as much as possible about the clinical trial and the investigational treatment and to freely discuss their questions and concerns with members of the research team.

Registration of Clinical Trials

Investigators and sponsors usually register their trials with databases such as http://clinicaltrials.gov/, an interactive online database managed by the National Library of Medicine. Clinicaltrials.gov facilitates the registration of trials in accordance with the International Committee of Medical Journal Editors (ICMJE) initiative requiring prior entry of clinical trials in a public registry as a condition for publication. Members of the public can find information about clinical trials by searching http://clinicaltrials.gov/ as it lists both federally and privately supported clinical
research. The site, which is updated regularly, offers information on the objectives of each trial, eligibility criteria, locations and contact details to obtain more information.

**Summary**

For patients, ISTs are a viable option for obtaining access to unapproved treatments. For physicians acting as investigator-sponsors, ISTs offer key benefits such as professional recognition and the opportunity to continue participating and collaborating in cutting-edge scientific investigations (see Table 1). However, ISTs present challenges to both investigators and patients. To be successful, investigators and investigator-sponsors must be highly motivated leaders with the skills and drive to coordinate the activities of many people to ensure completion of all study activities. Success generally requires careful planning, evaluation and management of the multiple aspects of conducting a clinical trial in accordance with all applicable regulations and ensuring that the various pieces of the puzzle fall into place seamlessly.

While ISTs provide patients with accelerated access to new treatments, these treatments have not received thorough review by a regulatory agency such as FDA or the European Medicines Agency, and as such, risks and uncertainties are unavoidable. Volunteers need to ask relevant questions of the researchers, remain vigilant for changes in their health status (particularly adverse changes), report them immediately and, in general, be aware that they shoulder significant responsibility as participants in an IST.

**References**

- Good Clinical Practice: Consolidated Guideline E6(R1), ICH (June 1996).

**Author**

Naseem Kabir, MS, RAC, is director, regulatory affairs international, at Genzyme Corporation, based in Cambridge, MA. She has been in the pharmaceutical and medical device industries for 20 years and in regulatory affairs for the last 12 years. Kabir holds a master of science in zoology from the University of Chennai, India and is RAC-certified in both the US and EU. She is a member of the Board of Editors for RAPS' Regulatory Focus magazine and can be reached at naseem.kabir@genzyme.com.
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Go to http://imune.name to learn and to get your course materials. You could get a Doctorate in Wellness and an international or accredited European professional qualification in neurophysiological bioresonance and biofeedback.

The Tassel is worth the Hassel. In a world so concerned of Wellness can be yours in just 12 months of Home Study, a simple thesis, a practicum and four days of monitored supervised contact.

Big Tobacco, Big Sugar, Big Pharma, Big Oil, and Big War Industry are exempt from lay and they kill and injure, maim and cripple in the name of profit. They seek to control and dominate medicine to further build their profits.

Their money controls governments, regulators, and the small minded media. The Ultra Rich Master Echelon Computer now sees and hears all the things we say, write, and do. Rights of privacy are gone worldwide. They have taken away our rights of free speech.

The Ultra Rich control the media and refuse to tell stories that expose or offend the Ultra Rich Power. They control every movie that gets distribution, every song that hits the radio, everything that is put on the world news. They use science and psychology to control and manipulate the minds of the masses.

But medicine is controlled by Universities that teach medicine. There is now one university starting to defend Natural Medicine. IMUNE has a new 12 month home study course that can be bought with Karma and you can learn how to do natural medicine and how to break free from the Ultra Rich control.

Well, the game of Reality Monopoly is still being played all over the world. One percent of the world’s population is winning and now controls over 80% of the wealth. The law allows the game to continue till we will see one winner and 6 billion plus losers.