

Are Girls with ADHD Socially Adept?

Janet Z. Giler, Ph.D., M.F.T.

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Are girls with ADHD as socially adept as their peers? The results of the first big study of ADHD in girls was recently published and the results suggest that, like their male peers, ADHD girls too are having some social problems. To understand why, we need to think of gender differences and what are the social rules that apply in female social interactions. Many children with ADHD tend to be bossy, aggressive, outspoken, have problems modulating



emotional expression and have problems using body language appropriately. While both girls and boys with ADHD tend to have these personality traits, we believe these traits are less acceptable in female social interactions.

Males and females in general, operate by different social rules. This was most clearly stated by Maccoby (1974, 1988, 1990) who observed groups of girls and groups of boys to determine what social rules were used. One of her findings was that boys played games in which there were clearly defined rules or hierarchies. (An example is team sports which operate by clearly defined rules.) When conflicts arose, boys were motivated to work out the conflicts so that the game would continue. In contrast, young girls tended to play games that involved relationships and cooperation. When girls had conflicts, it tended to end the play.

Gilligan (1974) found that females valued relationships and even defined themselves within a web of relationships. Tannen (1990), a linguist, re-

ferred to females using what she termed "rapport talk" (versus "report talk" for males). Female social rules place a greater value on cooperation, listening, care-taking, and relationship maintaining activities (sharing, empathizing, remembering events of significance to the other). If cooperation is so significant in female interactions, do the traits of ADHD make females less cooperative?

ADHD females appear to have specific problems in five areas. They are: 1- appearing uninterested because of poor listening skills; 2- displaying poor management or expression of anger or moods; 3- bragging or being outspoken and appearing self-involved; 4- forgetting appointments or being late; and 5- failing to show interest by *NOT* remembering or checking with their friends about their feelings, relationships or reactions to events that have occurred in their friend's life.

Females are "supposed" to know how to listen. Listening has two parts, hearing the words and letting the person know that you have heard them. Many children with ADHD do the first part but skip the acknowledgment. They don't take time or are unaware that a response is necessary. In "rapport talk," the "un huh," the positive comment, or the empathetic remark lets the person know you are following their words (Tannen, 1990). Listening requires taking the time to let the other person be the center of attention by focusing on the topic. Many children

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PRESIDENT'S COLUMN

The Good Ship "BSC"

As we headed out from Monterey Bay, we knew our destination was San Diego, but we were unclear as to where would be our convention "harbor" for 2001. You may recall that I likened this year at the helm of BSC to a Trans-Pacific race that I did on the fifty-footer "GreatFun" many years ago. Our four last days coming into Hawaii were wet and wild surfing conditions, which gradually backed down and flattened out as we approached our destination, finishing off the small light that marks the entry to Hanalei Bay, Kauai. Beautiful sunset, a Polynesian atmosphere, cocktails, and flower leis.

As I looked for a convention site this year, I was naturally drawn to the water. Despite some wonderful hotels on San Diego Bay, they were simply priced well beyond what we needed. As fate would have it, I found a great spot that we used some fifteen years ago. We will meet November 1 - 4 at the Hanalei Red Lion Hotel in Mission Valley. The hotel has a distinctive Polynesian ambiance, has a great pool, three decent places to eat, good convention room space, good exercise spa, and a warm hospitable staff. I am very pleased. The room rate is very reasonable and is the same whether you are single, double, triple or quadruple. Hotel rates in California are getting bumped up a bit with the current "energy/power" crisis or scam. Remember to book early. I recommend you ask for a room on the north side either facing the golf course or the pool. Even more ideal would be the northwest part of the hotel!



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FROM THE EDITOR

With this year and this Issue of California Biofeedback, we are going to the three issues a year format. The quality of the Newsletter will remain very high, and will increase its offerings.

Beginning with this issue, we will be adding a column by Doug Matheson. Doug is a professor at the University of the Pacific, and brings an academic eye to what we are trying to do as a profession and a professional society. I think you will find his comments stimulating. I have decided to begin writing on the topic of "Holistic Psychology," hopefully expanding your biofeedback practices by broadening your approach to treatment. Marjorie Toomim sheds some light on why we sweat, Ira Rosenberg helps us turn our own bodies into biofeedback instruments for breath work, the What's New column shows us a novel way to treat pelvic floor pain and dysfunction using tele medicine, and Janet Giler cues us into the key features of ADD when it is seen in girls.

Life just keeps getting more and more interesting. I hope that you find these issues of California Biofeedback of interest. I would certainly like to hear from some of you out there. Please feel free to react to Matheson or any material in the Newsletter. If you send an editorial comment to me, the chances are that it will see ink. Get involved. Go ahead. Enjoy life to its fullest!



Jeffrey R. Cram, Ph.D.

From the President

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On the Horizon

Look for a BSC all-day regional workshop in San Francisco on June 9th at the UCSF Medical Center Laurel Heights Campus. This will be a great opportunity to sharpen some clinical skills, connect with colleagues and friends, pick up needed CEUs, and exercise another fine BSC benefit. The event will be open

early summer as well. It is conceivable that biofeedbackers will want to make the short trip up or down the State to experience both workshops. I hope that you join me in my excitement and enthusiasm for the Regional Workshop as a continued annual event that we can all look forward to.

Distant Horizon

Our convention at the Hanalei in San Diego will be the first weekend in November as opposed to our traditional second weekend. The Program Committee, which I am spearheading, is

Barbara Woolner who has vast experience lecturing all over the country on biofeedback applications in incontinence will present a six-hour workshop entitled, "Biofeedback and Pelvic Muscle Dysfunction". She will provide extremely relevant concepts in working within this arena. We are hoping to also add a special guest medical expert from San Diego in this workshop. You will hear more in our next issue and on our website.

The short courses beginning to line-up for the 2001 event will have lots of new material to choose from and will kick-off, as usual on Friday morning. I am going with fewer short courses but more novel, fresh and relevant material to help you as a clinician. At the same time, I want attendees to have the experience at the convention of a less frantic, more relaxed and higher quality event. I want attendees to really have an extended and non-pressured opportunity to experience in detail what the equipment vendors are selling. I am hopeful of another great Silent Auction, which offers some amazing opportunities to pick up trainings, equipment, books, and a variety of valuable items at a great bargain. I am adding specific social opportunities. I hope to have an event Saturday evening that 45 to 90 people can commit to. A bus ride to the San Diego Zoo, a "Nocturnal Prowl" by flashlight, cocktail social, followed by a nice dinner.

Look forward to some great panels covering the theme of "Brain, Breath and Brawn," along with some prominent invited speakers, including a journey into an update on Virtual Reality as it applies to therapeutic tools.

There is still time to get me some of your own great ideas in to help our event and/or to get involved with one of our board member's committees. The response to my last column was not overwhelming, so I will add the special incentive of "anyone who volunteers on a BSC committee will be invited to a special event at the San Diego Convention." We have great fun running the good ship BSC. We invite you to join the mission. "Get On Board!" "All hands on deck!" Join the action. You will have more fun! I guarantee it.

*Hope to see you soon, with the wind,
your Captain, Bill.*

Look forward to some great panels covering the theme of "Brain, Breath and Brawn," along with some prominent invited speakers including a journey into an update on Virtual Reality as it applies to therapeutic tools.

to the public but at a considerably higher fee. The program will have two main parts. Ira Rosenberg will present "Biofeedback for Stroke Prevention" and will include such hot topics as how to use heart rate variability, heart rate power spectrum analysis, and EEG techniques with high-risk coronary patients. Jay Gunkelman, one of the nation's leading experts in EEG and QEEG, will present "The Psychophysiology of Attention Disorders and Depression". His seminar will cover a review of QEEG, significant clinical patterns and the appropriate neurofeedback interventions, discussion of data base comparisons as time allows, and a review of how various vendor's equipment can be adapted to specific neurofeedback protocol. Jay has a unique skill of communicating complex material in a clear digestible fashion. Don't miss it!

Our Regional Meeting Chairperson, Katee Wynea, has been putting this together and hopes to have an equally powerful workshop set to go in the San Diego or, perhaps, the L.A. area in the

working hard at making our 27th convention our best ever. Unique this year will be two pre-conference six-hour workshops taking place from 10am Thursday to 1pm and continuing from 2:30pm to 5:30. Attendees will be able to select from either an EMG based presentation or an EEG based presentation. Following the workshops, I envision a brief no-host social before attendees go their own way for dinner. We have two experts lined-up for these "Skills Acquisition Workshops". Dr. William Hudspeth will do his best to condense down a three-day workshop into six hours! He will survey sources of artifact in EEG recordings that prevent valid interpretations. The visual analysis of EEG waveforms to identify artifacts, normal variants and abnormal waveforms will be reviewed. He will review the anatomical and physiological bases of the different analyses used to describe brain function and dysfunction. He will demonstrate QEEG results and interpret implications for neurotherapy. There may be some applied practicum component as well.

Why Do We Need Incontinence Software?

John D. Perry, PhD

Arnold Kegel, MD, invented the first biofeedback instrument used for incontinence in the late 1940s, but in the following half-century there was very little scientific research based on his “Kegel Perineometer.” And what literature was published contained inconsistent and even conflicting data about what constituted “normal” and “abnormal” readings.

One cause for this confusion was that Kegel’s simple device, which estimated muscle strength from vaginal volume by measuring air pressure in an inserted balloon, was never accurately “calibrated,” either in its manufacture or in clinical practice, so different perineometers produced different “numbers.” Kegel’s re-labeled automobile tire gauges were simply not very accurate.

But even when a device was compared only with itself, the resulting readings showed great variation due to differences in how the numbers were obtained. It was necessary to “eyeball” the rapidly fluctuating needle of the gauge, and estimate the “average” reading over several seconds. As any student of psychology quickly learns, eyeballing raw data is probably the least accurate and least reliable means of making measurements. To make matters worse, some clinicians tried to estimate the “best” contraction score obtained, while others looked for a more representative or “average” score — obviously these very different measurement strategies produce very different results.

The introduction of vaginal EMG measurement techniques in 1975 solved the first problem by using absolute-scale electromyographic data. Within the limitations of amplifier characteristics like bandwidth and frequency response it became possible to make accurate and reliable comparisons both within and between subjects. The placement of the EMG sensor directly inside the vagina, in position adjacent to the pelvic floor muscles and typically only an eighth to quarter inch



away from them, resulted in excellent signal detection.

The use of EMG measurement has a second advantage over the manometric Kegel device, which only measures

evaluating pelvic floor muscles as well.

The crude data available from Kegel Perineometers had shown that there were at least two basic measurements possible — short and sustained contractions. These correspond, of course, to the two “basic” types of muscle fibers, commonly called fast twitch and slow twitch. In practice, Kegel researchers collected measurements of both quick “peak” contractions and longer, sustained contractions. In clinical practice these became known as “flicks” and “holds.” One of the most important early conclusions was that the sustained contraction scores — but *not* the quick contractions — showed a strong correlation with improved sexual functioning. Women with the best

Because it is based on an absolute scale, EMG data allows an accurate assessment of the state of relaxation of the pelvic floor muscles, which is something that no manometric system can do.

contractions, but not relaxation.

Urinary control requires both the ability to contract the pelvic muscles to prevent urinary flow at inappropriate times, and the ability to relax the same muscles to allow flow when it is appropriate. Inability to contract is related to stress and urge incontinence, while inability to relax is a major cause of chronic pelvic pain and even urinary retention. While less common, retention is potentially life threatening, if urine backs up into the kidneys.

Because it is based on an absolute scale, EMG data allows an accurate assessment of the state of relaxation of the pelvic floor muscles, which is something that no manometric system can do. All of the original assumptions and data from the original (static) Cram Scan have been shown to be useful in

muscles reported being multi-orgasmic, while women with very weak muscles were often non-orgasmic (Graber, 1979).

Based on this research we collected pelvic muscle data on research subjects using what was, at the time, the state of the art device, the Cyborg Q700 RMS Data Accumulator. Since it was designed to summarize the data of muscle relaxation training, it offered digital summaries of periods of 10 minutes, 1 minute, or 10 seconds. Obviously we used the 10-second option. The 10 second interval of the Cyborg device had an extremely advantageous feature — it captured and averaged *all* of the EMG data during a 10 second interval, and

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Bio Research Ad

TECHNICAL NOTE

Procomp, Biograph and Multi-Trace sEMG Calibration Issues

Jeffrey R. Cram, Ph.D.

Many practitioners currently are using the Procomp-based Biograph™, Biograph2™ or Multi-Trace™ software programs. The comments below pertain only to these software products and not to the Bio Integrator. I am surprised how many Biograph and Multi-Trace users are unfamiliar with the need to calibrate their Myoscan Sensors. This technical note explains the need for this procedure. Usually it is thought of as a procedure that you do when you receive your system and then forget about it. Unfortunately, the calibration issues for these software platforms are a little

0 microvolts for one Myoscan sensor might be 0.2 microvolts for another Myoscan sensor, and 0.7 for another Myoscan. You get the picture. Without calibration, if you are looking at a right and left upper trapezius, for example, your observations about the symmetry of the two sites might be thrown off due to differences in the Myoscan Sensors, rather than the patient's true sEMG activity. Thus, when you initially receive your equipment, it is very important to calibrate each of your sEMG sensors, so that the sEMG values you record are accurate.

In order to calibrate your sensor, Thought Technology supplies your system with the Zeroing Plug. You insert this into the end of the Myoscan Sensor, and then use an aspect of the Biograph, Biograph2 or Multi-Trace software to calibrate each sensor to an absolute 0 microvolt point. The actual procedure for doing this is explained in the manual that accompanies your software. I would refer you to your manuals to familiarize yourself with the procedure. Or call your distributor or Thought Technology to learn the procedure. The only word of advice I can offer is to label each of your Myoscan Sensors (A, B, C etc), so that they stay with the specific channel on the Procomp Plus which you are calibrating.

But, there is one more aspect of calibration that you must come to understand and appreciate. **You must calibrate each Myoscan Sensor for each sEMG screen you use.** In other words, *the specific calibration information concerning your Myoscan Sensor is saved by the software as a specific Screen Attribute, and not a general systems attribute.* So, each sEMG screen on the Biograph, Biograph2 and Multi-Trace would need to be calibrated for your specific Myoscan sensors. And, if you build yourself a screen to use, you would need to calibrate the sEMG sensor(s) for the new screen before you save it.

In an effort to keep your sEMG data clean, and to allow comparison of your results from one channel to another or from your clinic to that of others, paying attention to these calibration issues is imperative.

You must calibrate each Myoscan Sensor for each sEMG screen you use. In other words, the specific calibration information concerning your Myoscan Sensor is saved by the software as a specific Screen Attribute, and not a general systems attribute.

more complicated than that. Please read on.

The Procomp Plus utilizes the Myoscan sEMG preamplifier. Unlike its EEG counterpart, the Myoscan needs to be calibrated to the software you are using with the "Zeroing Plug." This is the 1 ½ inch "zeroing plug" that comes with your equipment. The reason for the need for this calibration is that each Myoscan sensor has its own "0" value. In other words,

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(and adults) with ADHD want to interrupt or change the topic and tell how they were affected or reminded of an experience they had. By changing the topic or telling personal associations, the ADHD female grabs center stage. Many people perceive this as selfish, self-centered, or just uninterested. While it may be the ADHD girl's intention to show interest, it is frequently not understood in this way.

utes to others. Many children with ADHD seem oblivious to this rule. Instead of telling someone "My new haircut looks good," many females will ask a question such as "How do you like my new hair cut?" The question is intended to elicit a compliment. No one really expects the viewer to say, "Gee, I liked it better the other way," but that is exactly what the ADHD person might say and they may even make a face to emphasize their negative remark.

Another obvious ADHD trait that can sour relationships is **forgetting appointments or being late**. When girls with ADHD forget a date or are always late, the other person often interprets

concerns, are traits that alienate people. Since females expect other females to be skilled in building rapport, females with ADHD are more likely to receive criticism or be excluded from their peer groups if they do not perform these friendship skills.

Perhaps the next study that emerges on this subject will examine the problems that women with ADHD are having. Are some of the problems related to being less skilled in rapport building skills? Are these problems more prevalent in a specific subtype of ADHD? Does the lack of early identification make these problems worse? Are females being treated and diagnosed on a par with their male counterparts? Hopefully researchers will conduct future studies to show how females with ADHD are faring and how they can be helped to live successful lives.

Dr. Janet Z. Giler is author of the ADDept Social Skills Curriculum, producer of the training video, "From Acting Out to Fitting In," and publisher and author of *Socially ADDept, A Manual for Parents of Children with ADHD and/or Learning Disabilities*. You can get more information on her work by accessing her website at <http://www.addept.org> or by writing her at 30 W. Mission St., Santa Barbara, CA. 93110.

Although the direct expression of anger is more accepted among the younger generation of females, the female who is too explosive or attacking is often avoided by her peers.

Handling anger or disappointment is critical to maintaining female social relationships. Although the direct expression of anger is more accepted among the younger generation of females, the female who is too explosive or attacking is often avoided by her peers. Anger disrupts relationships and can be seen as being tactless, too aggressive, or just too hurtful. While occasional anger appears to be more acceptable, the constant angry tone or too much expression of disappointment, are less acceptable female traits.

Impulsivity is a hallmark trait of ADHD. Impulsive people often fail to filter their thoughts. (Richard Lavoie called this "In the mind, out the mouth.") They often speak without considering how what they are saying affects another person. Whether it is an honest comment about someone else's flaws, or a complimentary statement about their own abilities (seen as bragging), the lack of consideration is often experienced by others as too harsh or uncaring. Without intending to, the ADHD person often finds that they have offended someone.

Bragging. Most children learn by age six that they aren't supposed to brag about their positive traits or attrib-

utes to others. Many children with ADHD seem oblivious to this rule. Rather than understand the ADHD person's difficulties with organization or making transitions, most people conclude that she doesn't care about them.

Females frequently build or strengthen relationships by checking on their friends and family to see what has happened with the various relationships or activities in which their friends or family are engaged. Many ADHD people travel so fast through their lives that they: 1) don't stop to remember what has occurred to their friends, and 2) are too busy (or are too forgetful) to ask questions about their friends' feelings or perceptions of the events that have occurred. They unwittingly give the impression that their friend's lives aren't important to them.

Impulsivity and poor mood regulation lead to offending behavior. Instead of building rapport, ADHD girls often alienate the other person. Being blunt, failing to anticipate the effect of what they say, failing to listen and respond, forgetting dates or being consistently late, failing to modulate one's expression of aggression or disappointment, and failing to keep a personal history of a friend's activities and

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Stens

THE MIND-BODY CONNECTION

The Hyper-Reactive Autonomic Nervous System

Marjorie K. Toomim, Ph.D.



As biofeedback therapists we see a range of autonomic nervous system response patterns. Normally, any excitation, positive or negative, increases sympathetic nervous system activity. SCR/EDR (sweat gland) readings rise and finger temperature readings fall with negative excitation and stress. Normally, sweat gland activity decreases, returning to baseline very quickly after activation. Failure to return to baseline results in ever-increasing sweat gland activity with subsequent excitation unless enough time elapses between stimuli to allow recovery to occur.

SCR/EDR activity is roughly equivalent to adrenaline production. This means people with an ever-increasing SCR/EDR response pattern are virtually loading themselves with adrenaline. They may take hours to quiet after a day at work. Sympathetic nervous system activation during intense dreaming may also waken them from sleep at night. They may feel depressed and fatigued when they achieve sympathetic-parasympathetic balance.

These high autonomic responders are prone to anxiety and panic disorder, all of the stress-related disorders, chronic fatigue syndrome and fibromyalgia. Their pain threshold tends to be lower than average, and therefore they are more likely to suffer from chronic pain after injury, and from mild to moderate myofascial pain syndrome.

Elaine Arom (1997) describes "The Highly Sensitive Person." I believe she is also describing the autonomically hyper-reactive person but has not looked at them with biofeedback instruments. I now recommend this book to autonomically hyper-reactive patients. They are relieved to know that approximately 20% of the population is "highly sensitive." They have so often been negatively labeled "too sensitive" and believe themselves weak and inade-

quate because of this quality. Highly sensitive people were often shy as children; are particularly affected by external stimuli — bright lights, loud noises, rough fabrics; are easily hurt emotionally; are easily overwhelmed by a complex environment or people making too many demands; startle easily; do poorly when competing or being observed while performing a task; get rattled easily when they have to do too much in a short time; are distressed by life-changes; and need to withdraw regularly to a quiet and private space to get relief from stimulation. Highly sensitive people are very aware of their own and others' feelings and are easily affected by the moods of others. They are aware of subtleties in their environment; have a rich and complex inner life; and enjoy delicate or fine scents, tastes, sounds, and works of art. Highly sensitive men are especially at risk in our culture.

Highly sensitive people are particularly vulnerable to stress; biofeedback therapy is particularly effective in treating the highly sensitive person with a hyper-reactive autonomic nervous system. The following protocol has been helpful: (1) Quiet and stabilize the autonomic nervous system through deep general relaxation training during weekly office visits. (2) During a portion of the session talk about stimulating subjects. When the SRC/EDR increases, stop and ask the patient to reduce it, paying attention to how this is accomplished. Being quiet? Changing negative to positive images or thoughts? Deep breathing? (Sometimes deep breathing increases sweat gland activation among these people). (3) The patient must use a relaxation tape at least once a day, and take two to three minute mini-relaxation breaks at least ten times a day — When going to the bathroom, waiting for elevators and at stop lights, When put on hold, When getting into and out of the car, etc. (4) The patient must relax and quiet after

every exposure to stress or excitation.

(5) Use imagery and stress management counseling to help the patient better cope with stress. This process continues until the SCR/EDR comes back to baseline quickly after taking a deep breath or talking about a stressor. Hyper-reactive and highly sensitive people are likely to continue to have a strong reaction to stress; the return to baseline after exposure is the critical factor.

Some highly reactive people have learned to protect themselves by "turning off," emotionally withdrawing in relation to stress. They seek biofeedback and relaxation training because they feel "wired" or stressed and report many of the characteristics of highly sensitive people, yet we see the paradoxically flat SCR/EDR response with a deep breath and in relation to stress (Toomim, 2000). The underlying hyper-reactivity comes through with very deep relaxation, When feeling emotionally safe, or perhaps while laughing. Imagery and cognitive behavior modification techniques that develop inner strength, confidence and coping skills are essential in these cases in addition to the above protocol. Where early abuse is part of the problem, it may be necessary to work through these issues and deal with post traumatic stress reactions (Toomim, 1993). Psychotherapy, perhaps augmented with neurofeedback, may then be needed.

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Holistic Psychology

Jeffrey R. Cram, Ph.D.

As I work in this field of Behavioral Medicine and Biofeedback for longer and longer periods of time, it has become abundantly clear to me that I am really treating the mind, body and spirit. Since I am practicing psychology according to the licensing boards of the state, it seems to me that it is now time for me to fess up to the fact that I am actually practicing what should be called "Holistic Psychology," of which Biofeedback is but one component of my craft. Beginning with this column, I will begin to share with you some of the adjunctive tools I have been using in my "holistic" practice for quite some time.

The first of these adjunctive tools will be that of Flower Essences. This would be a totally new area for most of you, so I would like to give you a little education about these essences, and supply you with some data that will hopefully encourage your curiosity on the subject.

I personally became interested in this area when two things happened. The first had to do with my wife taking a "home care" course on homeopathy, and bringing home a homeopathic kit to treat the family. It was in the fall, I believe, and a seasonal time for me where mother nature usually pops me one on the lips, and I would get cold sores. It

had worked like that, yearly, for most of my adult life. So, with the homeopathic kit in the house, I decided to give it a test drive on my emerging cold sore. Just as the cold sore was beginning to emerge, I used some Rhus Tox (the recommended remedy for cold sores). That year the cold sore never erupted. And, after a 25-year baseline, I must admit that I was impressed. And, I have been without cold sores for the last 7 years. This experience perked my interest in homeopathy.

A few years later, the prescribing element was being discussed for psychologists. While I have seen allopathic medications work very well for some patients, in general I have not really been a fan of substances. Too toxic, too mind altering. Homeopathy seemed to be a much gentler form of prescribing, and claimed to treat the psychological, mental and physical layers of being. So, I signed up for a year course on the subject. This training was a real eye opener. The major emphasis was on treating the physical layer, while considering the mental and emotional in the process. To become a homeopathic practitioner, you would need to take four years of schooling, spend well over \$12,000 in the process, learn over 2000 remedies and ultimately fine-tune your intuition to

find the remedy image in the person you were working with. In the long run, it was a very daunting and intuitive process. After the first year of training, I felt overwhelmed.

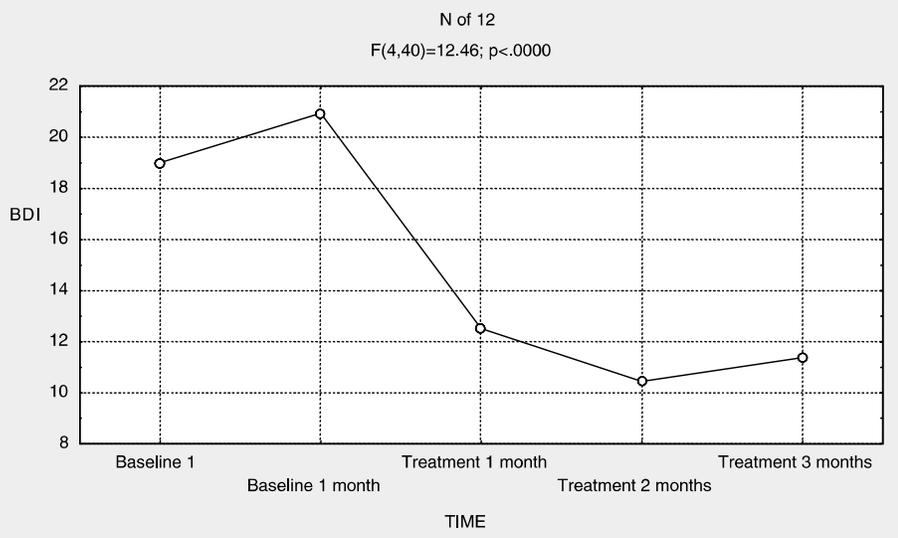
I decided to narrow the field of study down to Flower Essences. There are fewer of them, only a couple of hundred to learn, and they are used primarily to treat the psychological, emotional and spiritual realms, with a very minor emphasis on the physical. This seemed to fit the nature of psychology practice in a better way.

The English physician Edward Bach introduced Flower Essences in the 1930s. Flower Essences are not like perfumes or aroma therapies. Rather, they are subtle "vibrational" remedies prepared from the fresh blossoms of plants. In this way, Flower Essences are similar to homeopathic remedies, physically very dilute, but energetically very powerful. They differ, however, from homeopathic remedies, in that they are not selected based on the "Law of Similars," and they do not need to be taken in a highly diluted, "high potency" form, in order to affect the mind and emotions.

My interest in the area led me to conduct a placebo-controlled study on the effects of the Bach "Rescue Remedy" on the stress response. Maybe some of you will remember seeing this study, which I published in *California Biofeedback* several years back. To see the text of the study you may log onto www.flowersociety.org and look for the research section. The basic findings of the study were that the Bach Rescue Remedy (called the Five Flower Remedy by Flower Essence Services [FES]) reduced physiological activation associated with a mental arithmetic stressor.

Recently, I have been the lead investigator on a clinical trial for the treatment of depression using Flower Essences. Flower Essence therapy offers a unique approach to the treatment of depression. They are natural substances without any toxic side effects, and their impact is more directly on the psyche than on body chemistry. The Flower Es-

Figure 1. Effect of Flower Essences On Beck Depression Inventory



Why Do We Need Incontinence Software?

Continued from page 5

thus was actually a composite score reflecting both the amplitude of the EMG and the quickness of the contraction onset. Weak muscles, it turns out, are often not only weak but also slow to be recruited. The 10-second EMG score advantageously reflects this combination.

By alternately instructing the patient to relax and contract for 10-second intervals, we can separately record “relax” periods and “contract” periods and obtain averages for each. Originally these alternating intervals were manually calculated. Later, computerized programs made it possible to automate both the collection and calculation of summary data.

The earliest EMG biofeedback instruments were “unipolar” in design; that is, they only focused on one goal, the relaxation level. Logarithmic scales were often used to provide greater discrimination of low (relaxing) values. Later more sophisticated instruments adopted an “experimental psychology” model by separating “trials” from

intervening “time-out” periods. But here the “work” consisted of “relaxation” levels, and the “rest” period data was simply discarded. In muscle rehabilitation, the focus is bipolar and both the work and rest periods are recorded. The object is to increase the EMG during “work” and decrease it during “rest.” A “net muscle strength” score is calculated by subtracting the average resting level from the average contraction level.

In 1981 William Farrall of Farrall Instrument Company took an interest in pelvic muscle measurements, and together we designed a hard-wired clinical device that automatically measured quick, 10-second, and sustained contractions of up to 60 seconds. The short contractions reflect fast twitch fibers, while the endurance score reflects slow twitch fibers, and the 10-second score represents a combination of the two.

Three years later, When J&J Engineering introduced the I-300 computerized biofeedback system, we ported these Farrall hardware features directly to the new platform as the “Computerized Perineometer.” We also published, in 1984, “Software Standards for Perineometry” which defined and standardized these three measures. Our in-

tention was to enable other manufacturers to collect pelvic muscle data in a format that permitted valid comparisons between devices and research centers — something that was not possible with the original Kegel Perineometer.

In our next installment, we will review two new computerized systems for evaluating and treating pelvic muscle disorders. For those interested in a foolproof turnkey package, there is a new “Continence Training Software,” based on the C-2 interface from J&J Engineering. It provides everything the clinician needs to train patients in progressively challenging exercises.

For those who want more options — and more decisions to make — there is the MyoTrac 3 Continence System from Thought Technology, Ltd. It allows more screen adjustments, but that requires more planning. Both programs include excellent patient report generating features, which are essential for reimbursement purposes.

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B. Graber and G. Kline-Graber, Female Orgasm: role of the pubococcygeus muscle. *Journal of Clinical Psychiatry* 40:348-351, 1979

Holistic Psychology

Continued from page 12

sence is selected based on its ability to *resonate* with some aspect of our being which needs to be awakened. In this way, they are *catalysts* to our awareness and growth. Although many people feel a sense of immediate relief When taking Flower Essences, Flower Essence therapy in conjunction with counseling is essentially a journey of self-discovery, rather than the mere removal of symptoms. The potential of this therapy goes far beyond the overcoming of depression. There is the possibility of discovering one’s own inner sources of creativity and enthusiasm for life.

For this clinical trial, three psychotherapy practices have collected data on 12 patients so far. Their preliminary data is reflected in the Figure 1. During

the baseline of traditional counseling, the Beck Depression Scores remained stable. Once the Flower Essences were added into the therapy, the successful resolution of the issues related to depression were greatly enhanced, and a 50% drop in the BDI scores may be seen.

The fact that we see such a nice response curves to our combined Flower Essence and usual care intervention clearly suggests that practitioners can use non-toxic, energetic substances to assist their patients in coping more effectively with depression. Unlike traditional medications that work the biochemical pathways for depression, Flower Essences provide the practitioner with a tool to assist the patient in resolving psychological issues that pertain to and perpetuate their depression. Some practitioners might think of a Flower Essence remedy as a “transitional object”. For example, during the psychotherapy session, the therapist

might be assisting the patient to become more aware of how their traumatic childhood experiences play a role in their chronic depression. And, as part of the therapy, the practitioner adds Black Eyed Susan to the Flower Essence combination, and tells the patient that this will assist her in retrieving or resolving those memories. The theme initiated during the psychotherapeutic session, then, is taken with the patient in a ritualized and concrete fashion that will be reinvigorated as the patient uses the Flower Essence on a daily basis. In other words, Flower Essence therapy does not involve a “15 minute medication review,” but rather entails a good 50 minute hour of counseling made more effective with the help of the Flower Essence therapy. Such an approach seems in harmony with the practice of holistic psychology.

WHAT'S NEW

A Real-time Internet Solution for the Management of Pelvic Floor Dysfunction

Vulvodynia is a syndrome of unexplained vulvar pain that is frequently accompanied by physical disabilities, limitation of daily activities, sexual dysfunction and psychological disability. The typical patient is in her 20s or 30s, and is often misdiagnosed. In a general gynecologic practice population, the prevalence of this condition may be as high as 15 percent. The pain is characterized by constant or intermittent itching, burning, stinging or stabbing around the opening of the vagina.

Dr. Howard Glazer discovered that pelvic floor muscle instability is a critical factor in the pain associ-

ating with vulvodynia. He has published an article in the *Journal of Reproductive Medicine*, which illustrates how this abnormality can be measured with surface electromyography. Once a patient's exact abnormality is known, it can be corrected with an individualized exercise program of muscle rehabilitation, and continued monitoring to assure that the correct changes occur in the muscle.



ated with vulvodynia. He has published an article in the *Journal of Reproductive Medicine*, which illustrates how this abnormality can be measured with surface electromyography. Once a patient's exact abnormality is known, it can be corrected with an individualized exercise program of muscle rehabilitation, and continued monitoring to assure that the correct changes occur in the muscle.

TeleVital Inc. is currently working with Dr. Howard Glazer, and has developed an Internet-based software for his Glazer protocol used in the assessment and treatment of vulvodynia. This innovative approach will greatly improve access to his specialized treatment. Initially, Dr. Glazer will work exclusively with physicians, who specialize in vulvovaginal pain disorders. Dr. Glazer will provide pelvic floor muscle surface electromyographic assessments in real-time over the Internet. This will permit physicians to determine if pelvic floor muscle dysfunction plays a role in their vulvar pain patients.

Patients would simply insert a vaginal sensor, which connects to either J&J Engineer's or Thought Technology's surface electromyographic signal pro-

cessing unit that plugs into the computer's serial or USB port. The rest is handled by TeleVital's Internet browser-based software that allows Dr. Glazer, and other healthcare providers, to remotely view their patient's real-time physiology, while communicating with them using real-time audio, video, or built-in instant messaging features.

Auditory and visual cues will guide the patient through the entire procedure, while healthcare providers have complete remote control to adjust the gain for optimal display. After conducting a real-time, remote Internet session, healthcare providers view a graphical

and statistical summary report, which includes a field for adding clinical notes and treatment recommendations. This report can be printed locally, as well as remotely for the physician. All sessions are securely dated and stored for retrieval and trend analysis by either party at anytime, and from anywhere.

TeleVital's innovative approach complements any existing protocol, not only by providing the infrastructure for real-time, remote physiological monitoring, but summary reports, statistical calculations, intake forms, on-line educational segments, diaries, and visual displays can all be customized for the healthcare provider's particular needs. Each session can be reviewed, including home practice exercises, which assures compliance and proper muscle recruitment. Real-time, stored physiological data, and client's history can also be securely shared with colleagues for a remote consultation.

For more information, an online demonstration, or if you have an interest in web-enabling a specific device or protocol, you can contact TeleVital by email at: info@televital.com, or by phone at (408) 441-6732. You can also visit their Web site at www.televital.com.

NEUROFEEDBACK

Finding A Common Language

Susan Othmer, MA



How are you? ... Fine.

Most of us are socially conditioned to realize that this is only a greeting. I don't really want to know how you are. But what if I need to know how you feel? Can you access that information and describe it to me? Not what has happened to you recently, but how you feel right now.

Brainwave training rewards a specific shift in brain state, depending on what EEG frequency band is rewarded, as well as inhibit frequencies and electrode placement. When you have shifted state, I need to know how you feel – in detail. Your brain state will influence every aspect of your physiology, including arousal, alertness, attention, mood, muscle tension, pain threshold and autonomic tone. Much of the art of neurofeedback involves the development of a common language with which we can describe and understand these states. A shift up in arousal level, with a higher reward frequency, might lead toward increased mental clarity and brighter mood. Or it might lead toward increased anxiety and physical tension. A shift down in arousal level, with a lower reward frequency, might lead toward emotional calm and physical relaxation. Or it might lead toward grogginess and depression. You will move within your own state space. How you experience these shifts will be unique to you. It will depend on where you start and what your particular vulnerabilities are.

After training at a particular re-

ward frequency for a few minutes, I will ask you to check in with your body. Is it more tense or more relaxed? If I ask you how you feel, you will say fine; so I find it helpful to give specific choices. If your body feels more relaxed, does that feel good or not? You might be feeling relaxed and numb or dizzy. Then I will ask you about your mind. Do you feel more alert or less alert? I am working for a state of calm and alert. If you are alert but tense, I am training too high. If you are relaxed but groggy, I am training too low. Most people can learn to observe and report these changes in state, either within session or between sessions.

There are commonly reported symptoms of training too high including increased head pain, muscle tension, anxiety, racing thoughts, heart palpitations, agitation and anger. Commonly reported symptoms of training too low include increased grogginess, nausea, irritability, sadness and emotional vulnerability. Headaches may result from training too low as well. But each individual will experience a unique set of mental, physical and emotional changes with state shifts.

If we determine that you are feeling more uncomfortable with training, I will probably shift the reward frequency. This might be three minutes into your first session or after your first few sessions. I make an educated guess about which way to shift, based on what you report and what I know about you overall physiological pro-

file. After shifting frequency, I will ask whether your reported symptoms are more or less. I may need to shift farther in that direction, or I may need to back up and shift in the other direction. We work together over time to find a common language to describe and map out your state space. This allows us to optimize your training. It also allows for meaningful communication about the process of neurofeedback. And it allows you to be more aware of state shifts in your life – a useful component of any biofeedback program.

It takes attention and patience on the part of both client and clinician to communicate effectively. One common complaint we all wrestle with is sleepiness during sessions. Reported sleepiness alone is not specific enough to determine what adjustment is necessary. We all tend to be more or less sleep deprived. I need to know whether you are groggy or just sleepy. Do you feel drugged? What usually happens when you sit still? Are you surprised that you are falling asleep in a comfortable chair at the end of the day? After the session are you fully alert again? I may have thought you were bored and spacey and expected you to become more alert and awake when I asked you to shift up. But you may have actually been stressed and exhausted. When I asked you to shift up, you crashed and fell asleep. If I then ask you to shift down, you might feel more awake and alert. The process involves some trial and error as our communication gradually clarifies the results.

THERAPIST WANTED

Certified Biofeedback therapist for Indio and Santa Ana, Spanish speaking. Fax resume to (213) 384-2084.

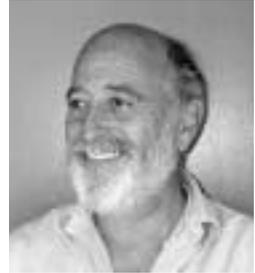
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A MATTER OF BREATH

Who Got There First?

Ira Rosenberg, MA



You're on shaky ground When you try to train clients to do what you can't do yourself. The learning process carries a lot more conviction When you are transmitting skills you use yourself. Then your language, your coaching suggestions, make sense. You'll find yourself coining words whose references to subtle sensory states you and your client will share. Of course you don't have to suffer from every disease and dysfunction yourself in order to provide authentic biofeedback training. But you do need to stay in continuous mind/body contact with yourself, which is all to the good. This doesn't mean you have to hook up to instruments regularly (although you might,) but you do need to refine your self-regulatory skills in a daily practice that has two main branches: a structured session with breathing, pulse, muscle, temperature, imagery and meditative exercises; and an informal, on-the-wing practice in which you notice, evaluate and intervene in the daily flow of arousals, reactions, internal and external sensations in the present without throwing yourself out of sync with yourself (and without becoming a precious, neurasthenic hypochondriac.) If you stay in training yourself, keep up with developments in the field and integrate them into your own style of training, you'll serve your clients well.

Since I do a personal training, I thought it would be interesting to you to follow me on my latest self-regulation adventure. I focus my clinical research on the relationships between the heart and the breath and, increasingly, on the influence of heart and breath on brain bloodflow as a prevention and treatment strategy for stroke, especially the small strokes and transient ischemic attacks I see frequently in my aging clients.

But how do you monitor heart and breath without instruments? How do you monitor brain bloodflow without

instruments? These problems can only be solved through a personal practice. Heart and breath are easy to follow. You can take your radial pulse while breathing and feel the RSA and other heart rate variability patterns. But this approach, which I've used and taught for years doesn't give you a very subtle or delicate access to yourself. So I also try to feel my pulse without taking my pulse, and I have developed several tricks that help me do it. They usually involve feeling the pulse in some place where the body is in contact with another surface, a chair, or bed. With one knee crossed over the other, you can watch your foot bob up and down. These approaches amount to a passive palpation strategy and they have a big disadvantage: they press in on the very vascular bed I'd like to encounter in the absence of a response to my own palpation. A kind of observer effect on the variable being monitored. What I'd like to do is feel the pulse beat without active or passive palpation. Sometimes I can feel my heart beating and that allows me to do RSA feedback without instruments or palpation. But here I'm using cardiac function rather than vasomotor activity to get the pulse, and the big whoosh and squish of the heart muscle blocks perception of the much more subtle sensation of the vasculature's own smooth muscle activity. The peripheral vascular bed is not a mat of passive limp pipes that simply swell as the bolus of blood passes through them. It's alive. It pushes back. Sympathetic efferent fibers to the precapillary sphincters put out a constant traffic of signals that influence the bloodflow.

Recently I found a way to do it all. At least transiently. The subtlest breath observation is at the tips of the nostrils. There you can feel the exact reversal moment of the breath and this is essential information for self-regulating the phase angle relationships When you do

RSA home training. I often do, and recommend,

"nostril breath following" exercises. A few months ago I thought I'd get really quiet and see if I could detect the pulse in the rings at the tips of the nostrils, and I did. Immediately on detecting the nostril pulse I began feeling the pulse beat spreading through the peripheral vasculature. Perhaps the subtlety of the awareness needed to feel the nostril pulse opened me to other pulse sensations. I've been refining the awareness in my daily practice, in order to do instrument free RSA, respiration and BVP feedback together — experiencing the "thinning" of the peripheral pulse on the inhale and its "widening" on the exhale (sometimes.)

Then I realized that others have been here before me, 2000 years before me. Without realizing it, I had reproduced a basic technique in Vipassana meditation practice, using the tips of the nostrils as a point of entree into body sensations. But I got there without a spiritual superstructure, no samskaras, no karmic stains, no presuppositions about "enlightenment," no afterlives, rebirths or nirvanas. I got there free, conscious and curious. That makes a big difference. That's what we train our clients (and ourselves) to do. It's a gift of biofeedback to the scientific world: subtle discrimination of internal states to induce physiological change. Too often When we get to inward states of consciousness we find the ground already occupied. The Gods, saviors, ascended masters, souls and spirits got there first and marked the ground with their language, theology, religious sensibilities and spiritual insights. Let's get there on our own, with unknown, open, as yet undiscovered future potentials.

HARDBALL WITH DOUG MATHESON

Douglas W. Matheson Ph.D., University of the Pacific

I have been a member of the Biofeedback Society of California off and on for nearly 28 years. Over the last several years I have seen fewer and fewer publications on what I would call “legacy” or traditional peripheral biofeedback methods and a slight increase in the number of central nervous system biofeedback, and neurofeedback. In all, not many studies on biofeedback have been done proportionally to other areas of behavioral research. Biofeedback was growing back in the ‘70s and ‘80s. I remember the claims of the early 70s on how EEG biofeedback was going to take the place of pot smoking, the people could meditate and stick sharp objects through their cheeks and feel no pain. And then something happened. At the University level, I found fewer and fewer students interested in psychophysiology, many not caring to wade through complicated issues of anatomy, physiology, basic neurology and most of all, bioelectronics. They knew that the rewards at the end of their degree program offered few jobs for biofeedback practitioners, little security, and no real future. At the professional level, biofeedback practitioners found it tough sledding with insurance companies and only a few clients who would or could afford their own treatment. Clients don’t need biofeedback to get rid of their pain. When the pharmacy is just around the corner.

With fewer people doing biofeedback, fewer people were doing the bread and butter science to support the discipline. Many “biofeedbackers” drifted into the fringes of pseudo science claiming success with chanting, drumming, meditation, and yes, even with legacy biofeedback. Of all the peripheral biofeedback modalities, respiration biofeedback remains one of the most solid, scientifically based treatment tools available for stress related issues, and probably is the least used (Fried, 1987). The problem is that good biofeedback got lumped in with questionable practices, and the whole thing



became suspect to the people who have the most influence on the insurance companies, the medical community. And who could blame them? At the 2000 meeting of the Biofeedback Society of California, my own graduate students began to squirm nervously in

earthshaking news, we need not be paid for a 30 minute talk. What is more important to our group, the profit motive or dissemination of good information and growth of our discipline?

I don’t mean to cast a broad net. There were many papers of merit at Monterey that included well thought out clinical/research ideas, but many of those excellent papers got lost in the abyss of the situation. So what’s the deal with biofeedback this month? I really don’t know, but one thing I do know is we need more young people who turn into bright graduate students. We need new blood, more people who have the energy, ideas and the enthusiasm of young people. Controlled research can be done with little or no money, but it does take effort and energy. Too many of us worry about

Many “biofeedbackers” drifted into the fringes of pseudo science claiming success with chanting, drumming, meditation, and yes, even with legacy biofeedback.

their seats as speaker after speaker made claims of clinical success that surely would not stand up to scientific scrutiny. My students looked at me with questioning glances and I had to agree, something was wrong. This wasn’t the WWF, this was a group of educated folks who thought they were in Fantasyland. I trust the elected leaders of our group will decide once and for all whether we are going to cast our lot with reputable papers, or go the way of mail order degrees. I have always felt it troublesome to pay people to speak about their work. We are certainly not paid to publish in refereed journals and unless we are all keynote speakers with

the bottom line rather than determining statistical significance. Not getting significance is like going the wrong way down a one-way street. The worst that can happen is we learn what not to do, or increase our N. One shot case studies, or small N clinical trials are important if they lead to some sort of well-controlled outcome study. The problem with small N studies is that they have little or no power in a statistical sense. Remember, power is the probability that a test will correctly reject the null hypothesis. Having no power increases the likelihood of mak-

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Hardball With Doug Matheson

Continued from page 17

ing serious decision errors.

Look at the speaker lists for the last several biofeedback meetings, both local and national. Do you see any new names or do you see the same old cadre of folks, saying the same old things, much of which is based on case studies or their clinical practice experience? Neurofeedback advocates do offer some new names and faces. Indeed there are new names and faces, but the list also includes neurofeedback zealots who predict neurofeedback will "cure cancer." On the other hand, scientists like Tom Rossiter (1998) serve our interests well with studies that can survive the test of peer review and time. In fact, his second paragraph in that article provides a sound argument for the use of neurofeedback in the treatment of ADHD rather than stimulant drugs. We need more of that. We need more original thinking like Hershel Toomin's hemoencephalography based on near-infrared technology and brain blood flow [http://www.snr-jnt.org/JournalNT/Vol3/JNT(3-4)1.htm - sp35]. Near infrared technology may provide the ve-

hicle for future clinical trials. Let's hope that our Society survives in this new century with a sense of enlightenment, new epistemic curiosity and discontinues its dabbling with snake oil. I know biofeedback/neurofeedback is for real, and those referred publications really help convince the people in charge of the money.

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Doug Matheson is a professor of psychology at University of the Pacific, and with his wife, Cindy, recently started an educational consulting business, On-Task Educational Consultants (<http://www.on-task.net/>) for kids and adults with attention problems. He also writes a biweekly computer column for the newspaper, *The Record*. Go to <http://www.recordnet.com> and click on business. You can contact him on by e-mail at macsmart@mac.com.

Are Girls with ADHD Socially Adept?

Continued from page 8

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Northern California Spring Biofeedback Meeting June 9, 2001 – UCSF Laurel Heights, San Francisco

Psychophysiology of Attention Disorders and Depression

9:00-12:00

Jay Gunkelman

Many neurofeedback (N) practitioners have had qEEG courses learning how to do the EEG processing. This seminar will focus on how to design a NF intervention based on the qEEG data. A brief physiology and qEEG review will be followed by a review of general qEEG patterns and the indicated NF intervention. If time permits, a review of how various vendors' equipment can be adapted to these interventions will be included.

Biofeedback for Stroke Prevention

1:30-4:30

Ira Rosenberg, MA

Using Heart Rate Variability, Heart Rate Power spectrum analysis and EEG techniques to treat older clients with cardiovascular problems that put them at risk for stroke.

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Northern California Spring Meeting Registration

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The Southern California Spring Biofeedback Meeting June 16, 2001

½ day: Dick Gevirtz — **RSA Biofeedback**

½ day: Jack Johnston — **Neurofeedback.**

Contact Kateew@earthlink.net for more information or write to BSC, PO Box 4384, Huntington Beach CA 92605-4384.

Fall Conference November 2-4, 2001, San Diego, California Brain, Breath and Brawn

Pre-conference workshops November 1, 2001

Full Day: William Hudspeth, Ph.D. —
Interpretation of the qEEG

Full Day: Barbara Woolner —
Assessment and Treatment of Incontinence

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