

# Biofeedback Matters®



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## Combining Bio & Neurofeedback

A question that I often get is "should I do biofeedback or neurofeedback?"

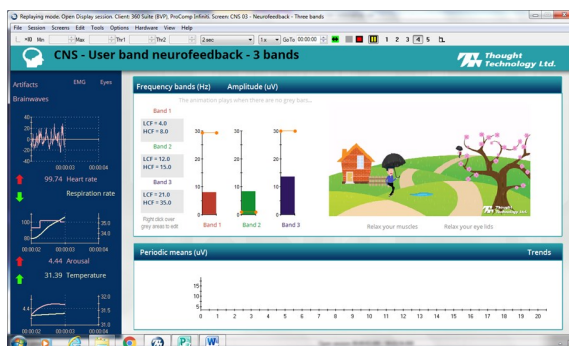
I usually pause before answering because my opinion is that you should do both. The discussion I tend to have goes something like this - Many people will decide to focus mostly on either peripheral biofeedback or neurofeedback because of the types of conditions and symptoms that they work with. The modality of choice for a given symptom may be biofeedback or neurofeedback

and so if you are planning to focus on a symptom that is more associated with neurofeedback like

ADHD then you might choose to start with and focus on the EEG/neurofeedback modality. If you are planning on focusing on something like pain related to muscle tension or tension headaches then you may choose to start with and focus on Surface EMG which is a peripheral biofeedback modality. I always suggest that a clinician learn the other type of feedback and incorporate it into their work as well. There are many reasons. First of all we are one body made up of multiple interdependent systems. Neurofeedback deals more directly with the brain and the central nervous system. Peripheral biofeedback deals more directly with the voluntary and autonomic systems. However one system does not work

without the other and each system has effects on the other. Another reason is that each client rarely has only one symptom. Often there are multiple symptoms and improving one symptom can have an effect on other symptoms. It is very possible that you may be getting slow results if you are only working on one system. Working on another system may cause results to come faster and be more lasting.

This is one of the reasons that Thought Technology's new 360 Suite combines both Peripheral biofeedback and EEG/Neurofeedback replacing the separate Physiology and EEG Suites. If you haven't upgraded yet I strongly suggest it. People also seem to like the new screens and features.



## Case Review

### Featured Product:



**Only \$395**

**Biograph Infiniti 360 Suite**

**Software**

**One Powerful New Software Suite for both Peripheral Biofeedback and Neurofeedback for Biograph Systems**

**Use Coupon Code:**



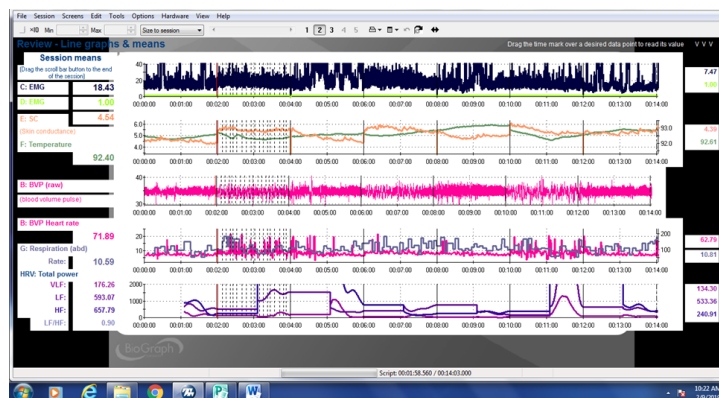
**Winter2019 to save \$40**

Note the 360 Suite uses the MyoScan EMG sensor (\$295) instead of the MyoScan-Pro. Please let us know if you also need a MyoScan sensor when you place your order

When starting with a new client we gather information from the intake as to what the complaints or symptoms are that the person wants help with. We then perform a psychophysiological stress profile for peripheral biofeedback and or a brain map or other EEG assessment baseline for neurofeedback. We look at what the literature says is the accepted effective protocols for the symptoms and then design a protocol and treatment plan customized to the client. Here is an example of data from a client that I have been working with and what we have focused on.

Symptoms: Anxiety, Insomnia, Tension headaches.

Psychophysiological Stress Profile Report:



The report shows elevated frontalis muscle tension averaging over 18 microvolts. Skin conductance level was also higher than normal and reactive with incomplete recovery after stressors. Temperature was relatively normal but reactive with recovery. LF/HR ratio for HRV was lower than I showing room for improvement.

We decided to begin by work-

ing on reducing frontalis Surface EMG and Skin Conductance. Here is the report graph from our first session:



Both muscle tension and skin conductance decreased during the session.

Here is a later Surface EMG and Skin Conductance session:

The average muscle tension is

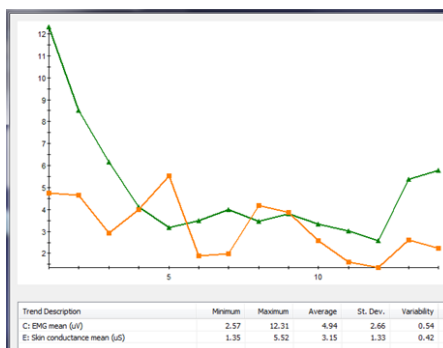


now 3.03 and skin conductance is 1.59 both much improved.

Here is a trend report graph



showing the average muscle tension and skin conductance graphed over several sessions:



It shows significant improvement in both measures over time.

During most of the sessions we alternated between relaxation

training with feedback and talking about work with feedback. Levels tended to increase during talking less over time with improved recovery.

He is feeling less anxious, hard-

ly has any headaches (maybe 1 in over a month, and is not having any trouble sleeping..

He downloaded a breathing pacer app for his phone and practices slow deep breathing regularly. He can feel that it is helping him.

Since we have made progress on surface EMG and skin conductance we can shift to spending more time on HRV and skin temperature.

This is an example of how you can begin and work with a client and track progress.

If you are working on your BCIA certification you will be expected to be able to demonstrate that you are able to move through this process effectively. Let me know if you need help.



## Wide Placement & Wide Filter

During our BCIA Certification Peripheral Biofeedback Training sessions this is one of the areas that can be a bit confusing at first. When we are covering the section on surface EMG we talk about wide placements and wide filters. Both have to do with EMG recording but they are very different.

Wide placement has to do with how far apart the EMG electrodes or sensors are from each other. The closer they are together, the more specific the reading is because you are recording from a smaller group of contracting muscle fibers. It is ideal to use smaller electrodes placed closer together if you want to record from a specific muscle, especially if it is a smaller muscle. This narrow placement also reduces the amount of artifact or unwanted signals that you might pick up if the electrodes were farther apart. If you want to record from a larger area then it is better to use larger electrodes placed farther apart. This will pick up from a larger area containing more

muscle fibers. A wide placement is also more susceptible to artifact from surrounding muscles, EKG, and electrical noise in the environment.

This image shows examples of both the wide and narrow placements.

There are two narrow



placements on the left and right upper trapezius.

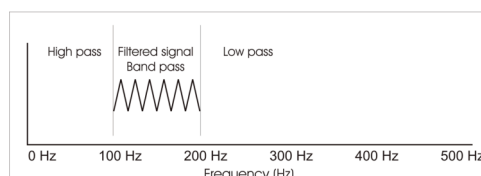
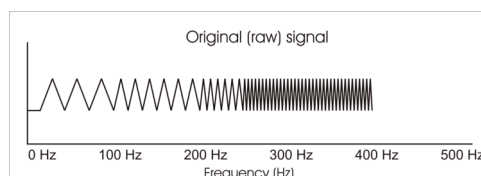
There is one wide placement covering left and right trapezius.

For narrow placements I recommend the Triode electrode that has the 3 electrodes arranged in a triangular configuration. They snap directly into the EMG Pre-amplifier.

For wide placements I recommend the Uni-Gel or DBF3D77, or 3SG3N individual electrodes (all available from our website).

Wide filter has to do with the electrical frequency range that is being recorded which can either be set on the hardware or in the software depending on which equipment and sensors you have. On the Thought Technology MyoScan-Pro EMG sensor

there is a switch that sets the filter for narrow 100-200 Hz or Wide 20 - 500 Hz. The narrow filter excludes all frequencies below 100 Hz and



above 200 Hz. The wide filter includes a lot more of the muscle activity but also can include much more artifact including EKG and environmental electrical noise.

The image on the right compares a narrow filter and wide filter. Notice the EKG artifact on the wide filter.



### Biofeedback/ Neurofeedback

#### Seminar Schedule

#### BCIA Certification

##### Biofeedback

May 3-5, 2019—Hawthorne, NY  
June 22-24, 2019 – Houston, TX  
July 19-21, 2019 – Hawthorne, NY - Fees: \$1,195

##### Neurofeedback

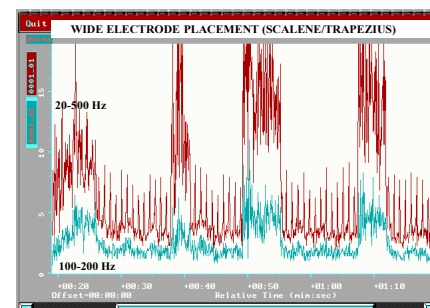
April 26-28, 2019—Hawthorne, NY  
July 26-28, 2019 – Hawthorne, NY - Fees: \$995

*Health Training Seminars is approved by the American Psychological Association to offer continuing education for psychologists and maintains responsibility for the program.*

#### Conference Schedule:

*AAPB 50th Anniversary Annual Meeting, Denver, CO March 13-16, 2019*

*Psychotherapy Networker Symposium, Washington, DC, March 21-24, 2019*







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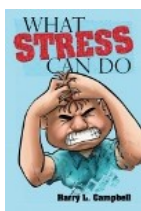
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**Harry L. Campbell**



Over the years I have formed relationships with many clients who have been able to help start or expand their biofeedback or neurofeedback practices. They attend a training program and or buy equipment. I help them learn how to use the equipment and how to do biofeedback or neurofeedback with clients. They learn the basics, practice them, and then they do a very important thing. They come back

to learn more. Most of the most successful practitioners reach out for help to get to the next level. It may be about learning how to use more of the advanced features of their equipment, how to implement a new protocol, or a business idea like a new market to go after to attract more clients. They might have started with peripheral biofeedback and now want to add neurofeedback or vice versa. What ever it might be they ask for help. There are some people I may talk

with every couple of months. Some conversations are only five minutes. Other times we schedule one to three hours to work on a project or do additional training or consulting.

Once I customized a biofeedback screen for a client in ten minutes. He was amazed how quickly I was able to change the way that he would be able to work with his clients and provide better feedback for them.

Give us a call!

