

Biofeedback Matters®



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May 2021

Skin Temperature Biofeedback

Volume 9, Issue 1



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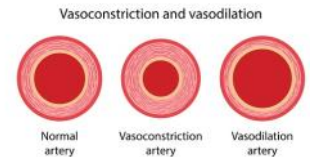
Skin temperature is one of the most widely used biofeedback modalities. It is very simple to apply the sensor. All that is needed is tape or a Velcro band. There is no skin prepping or checking of impedance involved. There are also very inexpensive ways to do temperature biofeedback. Most other modalities are usually more expensive. Using the modality may be simple. Getting a person to increase their hand temperature may not be quite as simple. "Peripheral temperature change is a response to sympathetic activity and the thermoregulatory homeostatic process of the body" *Mind/Body Integration, Essential Readings in Biofeedback*, Pepper, Ancoli, and Quinn, Plenum Press, 1979

The small blood vessels in the hands and feet

are affected by the fight or flight response. Sympathetic activation causes the smooth muscles in the walls of the blood vessels to contract. The diameter of the blood vessels becomes smaller when this happens. It's like what happens if you are holding a water hose in your hand and you squeeze it, except the squeezing happens from inside. This can help with survival in a real situation where you are out in a cold environment. It would reduce blood flow to your extremities and make more available to the core of your body where your important organs are located. When you come in from the cold this reaction would turn off.

This reaction also happens as a reaction to emotional or mental stress. When you do temperature biofeedback with someone

and have them increase their hand temperature,



you are helping them turn off this stress response. Why is it that a person can increase their hand temperature by 2, 5, 12, even 20 degrees during a session? To me, it means that the stress response, including sympathetic activation, is partially turned on most of the time. The fact that hand temperature increases means that sympathetic activation is turning off. Looking at it this way, whenever we are able to increase hand temperature using biofeedback, we are turning off the sympathetic activation and turning on the relaxation response.

So how does a person make their hand temper-

Virtual Biofeedback Training

Low Cost Biofeedback System Deals

Option 1



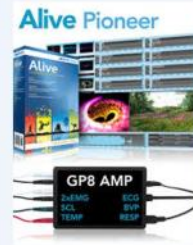
Heart Rate Variability and Skin Conductance sensors with Alive Clinical Software for **only \$639**

Option 2



Heart Rate Variability, Skin Conductance, Temperature, and Respiration sensors with Alive Clinical Software for **only \$998**

Option 3



Heart Rate Variability, Skin Conductance, Temperature, Respiration, and Surface EMG sensors and Alive Clinical Software for **only \$1,298**

This system will also allow you to do EEG with the Physiocom software which is also included. Physiocom software gives additional options for all modalities.

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several factors. These are questions that need to be answered in order to decide which device to get.

What is the budget?

Who is paying for the device?

Will it be loaned or rented to the client or will they be buying it?

Will you charge extra for providing a device for the client?

If you are renting a device to the client, how do you insure that you get it back?

Which modalities do you need them to train on?

Temperature has the least expensive options available. EMG and EEG are the most expensive. It is also more expensive if you need multiple modalities. Some devices only provide one channel and one modality. The SC-911 is a one-channel temperature device. The E-Sense Skin Conductance and Temperature are one-channel skin conductance and temperature devices that connect to a smart phone or tablet. The EmWave Desktop and I-Feel are one-channel Heart Rate Variability devices that work with a computer and HeartMath or Somatic Vision Alive software. The BioSignals HS includes Heart Rate Variability and Skin Conductance and the BioSignals HS+ includes Heart Rate Variability, Skin Conductance plus Temperature and Respiration. The GP-8 includes EMG/EEG, Skin Conductance, Heart Rate Variability, Skin Temperature, and Respiration.

Call us if you need help figuring out how to get started with virtual training.



New Biofeedback & Neurofeedback Equipment Rental Program

We offer instruments for rent to practitioners or directly to your clients to make the process easier for you. Items available for rent include:

Thought Technology Procomp-2

Thought Technology Procomp Infinity

J&J GP-8

J&J GP-12

Heartmath EmWave Desktop

BioSignals HS with Alive Software

BioSignals HS+ with Alive Software

BrainMaster 2E

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Even prior to when the world was hit with the COVID-19 pandemic many therapists had been providing phone and video sessions to their clients. Those who already were doing it were at an advantage when everything was shut down to slow the spread of the virus. People who were not set up for virtual work were left to scramble to get set up or have their businesses paused until things opened up. Some practices did not survive. Some of the ones that were able to continue to function actually got busier because clients still were looking for services.

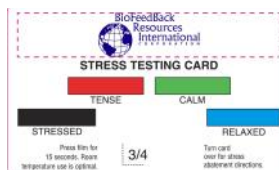
With biofeedback services you have the added issue of providing a biofeedback device for your client that they can use at home. You probably don't want to let them borrow your \$6,000 office system. Luckily,

there are some relatively low cost devices that you can set them up with that they can use at home. A low tech option like the SC-911 Digital Stress Thermometer doesn't interface with the computer or save data but it does give a temperature reading to a tenth of a degree, which is acceptable resolution for biofeedback. You could have the client arrange their web-cam so that you can see the instrument screen or just have them record pre and post readings. Better yet, you could have them use a device that interfaces with their computer and share their screen so that both of you can see the information and the data can be stored and shared with you.

Devices that I would recommend for home use range from \$25 - \$1,600. Yes, that's a wide range. It depends on

ature increase? Trying to make your hand temperature increase is almost a sure way to make it go down. Increasing hand temperature is more passive than active. It involves allowing, not making it happen. You want to have the intention but there should not be mental effort.

Relaxing imagery, especially scenes involving warmth like imagining that you are at the beach, holding a warm beverage, or warming your hands in front of a fireplace can be effective. Slow diaphragmatic breathing is another relaxation technique that works. Autogenic relaxation exercises combine imagery, breathing, and



physical relaxation that is often used with temperature biofeedback to promote increased hand or foot temperature.

Most biofeedback protocols suggest a goal of increasing temperature to 94-96 degrees Fahrenheit. A better short term goal may be to aim for an increase of 2-5

degrees within a session.

There is a modality of choice for some applications. Here are a few for temperature. Migraine headaches, hypertension, Raynaud's disease, and diabetes.

More advanced training goals include training on different fingers on both hands and training on the feet. I have heard several professionals state that they will not train clients on the feet because it is "disgusting". If that's what it takes to provide the best results then there are ways to do it and we probably should.

This might be the difference in getting excellent results when dealing with serious conditions like hypertension and poor circulation in the feet associated with diabetes. Many people have lost toes and even feet due to compromised circulation in their feet.

Would it be worth it to find a way to help a person not have to have their toes amputated? How about if you could help a client reduce or eliminate a hypertension medication that has undesirable side effects? I think it can be worth it.

Clients should also be taught to increase their hand temperature un-

der conditions that are not as ideal as you probably make them in your office. Try introducing a stressor and having them increase the temperature after it has dropped several degrees. Have them carry a low cost temperature device like the SC-911 Digital Stress

Thermometer for \$24.95 or even a Stress Card for \$0.80 or a Finger Thermometer for \$1.00. With one of these tools, they can check their hand temperature at almost any time to see where it is, then they can practice increasing their hand temperature to a level that would indicate relaxation. Being able to do this puts them in a



much better position than just being able to do it while reclined in a dimly lighted office with relaxing music playing.

Some clinicians and researchers even suggest using a cold challenge where the client might hold something cold in their hand or put their hand in cold water for a while and then practice increasing their hand temperature. As you can see even though temperature biofeedback is relatively simple, there is a lot that you can do with it. I hope this got you thinking. ★



Biofeedback/ Neurofeedback

Seminar Schedule

BCIA Certification

Biofeedback

July 9-11, 2021

October 8-10, 2021 all dates

Hawthorne, NY

Online sessions

September 2, 9, 13, 16, 20, 23, 27

Fees: \$1,195

Neurofeedback

August 13-15, 2021

November 5-7, 2021

All dates Hawthorne, NY

Online sessions

June 7, 10, 14, 17, 21

October 18, 21, 25, 28, Nov. 1

Fees: \$995

Please visit

www.biofeedbackinternational.com for our online dates

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





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FRIDAYS

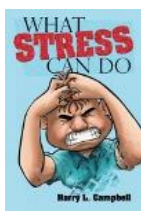
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Harry L. Campbell



I am working on doing a better job of being grateful for all of the blessings that I have received. Taking time to be thankful for my health, family, friends, business, customers, and everything else I can think of.

I find myself spending more time with family and not just working all of the time. My granddaughter Arian will be turning 2 this summer and she's going to have a new brother the following month, God willing. I also need to plan some fishing days for this spring, summer, and fall. I usually ask people what they like to do when they are not working when they attend our seminars. When it is my turn, I say that I like to fish to remind myself to keep that promise to myself not to

work all of the time. If you have noticed, if you do biofeedback on



yourself, your readings almost always have room for improvement when you start. Even if you don't feel stressed, you can usually become more relaxed than you were before you start a session. When we relax our nervous system gets a break from the at least partial chronic stress response condition that it is in much of the time. Heart Rate Variability bio-

feedback usually involves using positive emotions combined with paced breathing. Thinking of a place, person, or pet etc. that gives you a positive emotion. Look at this picture. This kid does it for me!

Some people that I know and have known have not had the chance to spend time around their children or grandchildren. I am blessed enough to be able to spend time around both for now so I am going to take advantage of it as much as I can. Thinking about how fortunate I am should help to balance my autonomic nervous system and improve my Heart Rate Variability scores.

"The need for connection and community is primal, as fundamental as the need for air, water, and food." Dean Ornish

