Rethinking Trauma

The Fear-Driven Brain: How a New Intervention is Changing Trauma Treatment

QuickStart Guide
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by Ruth Buczynski, PhD
with Sebern Fisher, MA

1. Using a videogame to calm the fear-driven brain

Sebern talks about how a videogame interface can show a patient exactly what their brain is doing and help the brain regulate itself by providing the brain with feedback on its activity.

You are asking the brain to play a videogame through these wave forms. The computer is hooked up and you are really just playing a videogame with your brain, and the videogame correlates to the frequencies.

When you make the reward frequencies, you also inhibit the brain from making the frequencies that get in your way (which are excess slow-wave - only good at night when you are asleep - or excess fast-wave, which represents in most cases excess body tension). You put inhibits on those frequencies.

Then you ask the brain to do three tasks: inhibit the excess slow-wave and the excess fast-wave – and then to make the targeted frequency.

So, for instance, if you wanted to get into a relaxed state – we are not talking about any kind of pathological condition, but just say you wanted to get into a relaxed state, you wanted your brain to look a little bit like that of the Dalai Lama – what you can do is reward the brain when it makes alpha-waves.

When the brain makes alpha-waves, the game will advance. Over time – and it can be during the course of the game – a person will quiet, feel more relaxed, and often their body will feel heavy.

If that is the right frequency for calming, then that is what happens. People can often feel it right during the time they are training. (p. 5-6 in the Part 1 Transcript)

2. Finding the right “frequency” for each patient

Specific neurofeedback protocols are based largely on clinical assessment. Sebern talks about assessing each patient before and after each session, and changing her protocols based on her assessment.
I can change the frequencies that are to be rewarded and to be inhibited. That is within my purview as a trainer.

The initial frequencies that I choose are based on assessment. Just like you would make any kind of clinical assessment, you are looking for what kind of arousal profile they have based on conversation with your patient or looking over their history.

Generally speaking, the developmental trauma group that I wrote about almost always comes in highly aroused – and that is felt as anxiety, fear, and often agitated depression.

It is incumbent upon me to find the frequency for their brain that helps them to feel less of all of that and to feel calmer and quieter.

I then change the frequencies according to the specific changes that they report in the way they feel. There are certain indicators, like lower-back pain or neck pain that suggest that the frequency is too low. Or they feel like they just couldn’t get out of bed for two days after the training – they were just too tired – that would suggest to me that I had dropped the arousal of this brain too far.

If they felt more reactive, they had a rage episode, they were crying nonstop, we would sort all of that out and I would say, “It’s very likely that we need to leverage this arousal,” and we do that through changing the reward frequency. So that is the give and take. (p. 7-8 in the Part 1 Transcript)

3. Getting started with neurofeedback

A powerful tool like neurofeedback requires some preparation and training before using it with patients. There are a few things to know about incorporating neurofeedback into your own practice.

There are four-day trainings that are hands-on, where you become familiar with the system and then you train your brain and somebody else’s brain. You become familiar as well with the effects of the training and how to move with what the effects are that you have seen. That is just the beginning.

It is recommended that people go home and work with family and friends – people who will forgive you for making the inevitable mistakes that you will make. But even if there are mistakes, it’s all information about what the brain needs and wants. Ultimately, it’s all data.

We hear a lot about brain plasticity, and brain plasticity seems to reside in these frequency-based oscillations that we are conditioning. We are saying, “Oh, yes – I’ll make more of that, or I’ll make less of that,” and people change.
In terms of cost, the systems generally fall in the range of $6000, they last forever, and you get upgrades. When I bought my setup, it probably cost twice as much as it costs now. (p. 13 in the Part 1 Transcript)

4. **Repairing attachment with neurofeedback**

*Attachment is one of the most prevalent and persistent issues among trauma patients. Sebern explains why it is that neurofeedback is so effective at re-establishing the attachment that her patients have lost.*

In my experience, what I have seen is that people always seem to want relational connection.

Things can get in the way – if you are having something akin to a seizure and you’re constantly living in fear, it is very difficult to imagine relationship as a primary part of your life.

But we are social creatures; we are meant to relate to one another. That is our safety; that is our harbor, as my patient said, and when you find a way to quiet the fear-driven brain, what emerges quite spontaneously are the attachment circuits.

I had one patient – this is the one I was speaking about – who was self-abusing and dissociative when she came into sessions. She had not seen her mother nor talked about her mother – so this wasn’t a result of conversation – but her mother had not behaved ideally.

She came in one day and she said, “I think you might be interested in this: I called my mother last night.” It was spontaneous, and now we could talk about the reality of her mother’s trauma.

Now, this had been presented to her multiple times, and it even occurred to her, but the dysregulation and high arousal of her nervous system made it pretty meaningless.

I see that happening a lot. I see spontaneous family reunion that I have nothing to do with orchestrating, and often, without even talking about it, I see it happen with people who train their brains. (p. 15-16 in the Part 1 Transcript)

5. **Neurofeedback in the clinical setting**

*Sebern describes how her sessions are usually structured and details the timing of a typical neurofeedback session.*
6. When NOT to use neurofeedback

While neurofeedback has proven effective for a wide range of disorders, practitioners must use discretion in its application. Sebern talks about some of the limitations on using neurofeedback.

For some patients, I can’t use neurofeedback. If someone calls me and says that they have a seizure disorder, I refer them to a medical person because I can’t, in the scope of my license, treat seizures.

That being said, we have just talked about the amount of seizure-like activity that is apparent in the brains of many patients with developmental trauma.

I can treat for everything else that they come in for. I can treat for anxiety or depression, and in that process, it’s all the same brain being dysregulated by history.

So, yes, I can treat these patients as long as I am not stepping outside of my scope of practice and making claims of cure – which I don’t do.

Neurofeedback is a learning technology that we offer the brain – an opportunity to learn its own self-regulation. (p. 16-17 in the Part 1 Transcript)

7. Two kinds of neurofeedback trainings in trauma therapy

Sebern talks about the two most widely-used neurofeedback protocols: the more active alpha training, and the more relaxed alpha-theta training.
There are two kinds of trainings in standard practice – and there are more that are coming along.

There is eyes-open, where you are training the brain to make more alpha waves, so they are playing the videogame and they are very engaged in that activity.

In alpha-theta, the person is generally lying down in a reclining chair with eyes-closed and they are listening – their feedback is almost completely auditory.

They are listening/hearing when they are making alpha – the goal here is to make alpha and theta – and when they are making alpha, they will hear a certain sound that is actually the same frequency as alpha – it will have that same frequency component. (p. 19 in the Part 1 Transcript)

8. Mindfulness and neurofeedback

Mindfulness and neurofeedback can work extremely well together. But while mindfulness practices seek to affect the brain by changing the way the mind works, neurofeedback seeks to affect the mind by changing how the brain works. Sebern explores this idea a little bit.

Neurofeedback allows a greater capacity for mindfulness.

As I said earlier, one of the first threads of research was conducted by a woman named Anna Wise who wrote a book called High-Performance Mind, and her entire focus on neurofeedback was how to help people learn to meditate more deeply. So meditation is one aspect of neurofeedback.

I think general mindfulness is enhanced greatly when there is reduced anxiety or reduced depression or reduced volatility in the nervous system – it is much easier to be mindful. It creates the conditions for mindfulness; neurofeedback isn’t a practice of mindfulness per se.

The premise here is that it is more effective to reach the mind through training the brain than it is to reach the brain through training the mind.

Our practices of meditation and psychotherapy are working with the mind to try to get control over the brain. I’m a meditator, so I understand that endeavor, and it is not all that easy to do.

We are sort of reversing that mind-brain interface of where we intervene, and we are intervening at the level of brain regulation.
9. The research behind neurofeedback

Dr. Ron Siegel and Dr. Ruth Lanius talk about the promising research being done on the effectiveness of neurofeedback with various disorders.

Dr. Siegel: I knew a little bit about this beforehand, and I did do a quick check of the literature. Now, I hate to hold up frankly any mental health intervention to the gold standard of a double blind placebo control study, because it’s tough to get past that with anything.

But I found it was interesting that while for ADHD, it didn’t turn out to be better, for several other things such as depression, and even helping kids with learning disabilities, neurofeedback was tested against an equivalent placebo treatment and actually showed different results. I found that very, very heartening, and it made me more interested in exploring it.

Dr. Lanius: Let me just to add to that for a second. We’ve actually recently done a study looking at one session of neurofeedback, and looking at some major brain networks in the brain. We compared neurofeedback to sham control condition, and it was only the neurofeedback condition that had a significant affect on the brain networks.
10. Calming the brain

*Bill O’Hanlon shares a technique he has used to help trauma patients achieve the same kind of calm brain activity that Sebern encourages with her patients.*

Getting patients to a calm state is obviously a challenge when they’re traumatized, when they’re anxious, when they’re upset. But I’ve worked in this area, and I was influenced by Milton Erickson, who said that there’s always a place in people’s history where they have had calm.

Maybe it’s when they took a bath, a hot bath one time, or laid in a hot tub. Maybe it’s when they got a massage some time in their past.

They wouldn’t know they were anxious unless they’d had a moment of calm to compare it to. So somewhere in their past they have had an experience of calm, and I like to bring them back to that moment.

And don’t just say “Was there ever a time you were calm?” Really bring them back to that moment. Say “What was that like? And where were you? And how did that feel? And how is that different from usually when you’re so anxious?”

And here’s the thing about the brain: when you send them to pay attention to that, it evokes that brain pathway. It sort of re-evokes that experience in the neurology in the brain, and the physiology. Just help them remember, simply remember — but in a very detailed way — a moment of exception to the usual anxiety, or panic, or feeling unsafe, or danger, and then working to amplify that a little. (Part 3)