

INTRODUCTION TO NEUROPLASTICITY FOR STRESS MANAGEMENT



To thrive in life, you want to free yourself from ongoing emotional pain and stress. The brain-body systems involving stress are designed to work automatically and rapidly help you deal with perceived danger and life threat; but they aren't meant to be 'ON' continuously. When stress automatically turns "ON" the higher brain works less efficiently; thus, allowing the body to be stronger and motivated for fight, flight, freeze, or flop responsiveness. If you understand this brain emotional pain and stress feature what your body does automatically, then you can do more than just manage stress, you can change the brain so the emotional pain responses don't keep going and growing.

And that's why you need to understand neuroplasticity as it will help you to re-conceptualize emotional responses and plan the most effective interventions. You can actually use neuroscience to change what your brain does next time, so you're less stressed. In fact, understanding neuroplasticity provides the key to creating fast and lasting change in stress or emotional reactivity. It is not events that produce anxiety; rather, it's your brain. So, to change anxiety you must understand how to influence and rewire your brain.

The concept of rewiring your brain can be seen in the media, and is supported by the science of neuroplasticity. You may have already heard that the brain can be changed and rewired. But you may not know how to influence, alter or change the brain so that rewiring takes place.

New possibilities involving the brain and change are quite fascinating, as they incorporate cutting edge neuroscience discoveries, and have potential to transform emotional pain and mental-emotional disorders in no time. Neuroplasticity concepts are being used to empower emotional pain interventions including processes to transform an emotionally charged trauma memory from the past in minutes.



Neuroplasticity Basics

Neuroplasticity is the brain's innate ability to change or reorganize itself. The brain can change in both function and structure. That innate potential to change can be harnessed and used to make you feel better fast.

Plasticity refers to brain's ability to reorganize itself throughout a person's life as a result of experiences. The brain is malleable, rather than fixed as once theorized. Like plastic or silly putty, you can mold the brain and increase its growth potential, flexibility, and power. This plasticity feature is considered a paradigm-shifting development in neuroscience. And that's why you need to understand neuroplasticity.

Specifics about brain change include fancy terms like neurogenesis, which is the growth of brand-new neurons (brain cells) in key brain regions, such as the hippocampus. Scientists have provided evidence showing enriched experience promotes the growth of new brain cells. In a now-famous London Taxi Cab Drivers study, we learned that subjects who focused on memorizing the streets of London for two years and then take their license test experienced new cell growth and a larger than average hippocampus. There's potential that enriched learning environments can grow new cells, and change brain regions or structures.

Neuroplasticity can also target and foster synaptic growth potentials, often-called synaptogenesis or the making of new connections between neurons. This is another way the brain can be altered with experiences. While synaptic change potential is seen early in the brain's development and characterized by tremendous growth followed by cell death, synaptic change also occurs in the acquisition of new skills or experiences. The potential to strengthen synaptic interconnections between neurons (via repetition or practice) exists as well.

Plus, it's possible intentionally to disrupt and prune old neural patterns—to rewire, reshape, or update these patterns with brain interventions. That translates into changes you can initiate in your: behavior, memory, thought, and emotion.



The Timing for Neuroplasticity

According to Dr. Michael Merzenich, known as “the father of brain plasticity,” there is a critical time for the brain to grow and change. That time is in utero (before birth) and in early childhood.

The brain grows enormously during early development. It develops similarly to the physical body only exponentially faster when you look at this from the cellular and neuron level. As the brain matures, it undergoes physical and chemical changes that create what Merzenich calls the “OFF switch” on its plasticity and early years of brain cell and associational pathway gains.

However, plasticity can be turned “ON” at any time in a person’s life if the circumstances are conducive to doing so.

The Key Requirements for Life-long Neuroplasticity

In Merzenich’s book, *Softwired*, he suggests four key requirements **necessary to flip the switch to “ON” and achieve life-long neuroplasticity.**

These occur:

- 1. With careful use of attention, such as a focus on a task, intention or goal.**
- 2. When the brain receives reward or punishment—or expects either.**
- 3. When the brain positively evaluates your performance in goal-directed behavior. (You can notice what was done well and highlight positives or potentials to turn on neuroplasticity).**
- 4. When the brain is surprised—or threatened—by something new or unexpected. (Novelty and surprise provide useful keys when you attempt brain-changing interventions because they activate an automatic emotional response.)**

Learn to Turn ‘On’ Neuroplasticity for Your Brain to Change

It certainly helps to know the brain and how to turn on its neuroplasticity. As a brain-changer, it’s imperative for you to understand how to promote neurons firing and wiring together or apart. When you rewire your brain in this manner, brains change—and so does emotional pain and stress.

When you’re in anxiety or stress, remember that your brain is processing information and causing an automatic response. Your goal is to interrupt the unfavorable automatic response using some neuroplastic tools to alter how the brain automatically processes and responds.

Some of my favorite tools are explained below.



For change to take hold in anyone, new neural pathways need to be repeated, practiced, and stabilized. What's useful is finding ways to influence the brain's automatic-seeking responses with dopamine-coded patterns that automatically influence motivation and the brain's reward systems. You might think of success and high-performance habits in this way.

Consider neuroplasticity science your interventional ally. To create quick and lasting change, it's essential that you consider including activities and experiences that foster neuroplasticity.

- Next time you feel emotional pain or stress. Notice that when you focus attention on it, you get more stressed. But if you view it as something that is playing the brain's emotional systems, you get curious and can shift attention to influence and alter what the brain is doing.
- Be intentional about using your attention, then focus and do something new. Instead of stressing more, struggling or avoiding feelings, you can alter the old anxiety patterns by using a 'Play the Brain for Change Tool'. Position of your hand on your stomach and breathe in through your nose, so the hand moves, and then exhale through your mouth. You activate the vagus nerve by breathing slowly and deeply while focusing on your hand and that facilitates brain-body communication.
- The tool helps you train your brain to create a calm state. Of course, you could focus on a task, just go do something to break the stress cycle, like take a walk or call a friend, but then you're only managing the stress not changing the neural pattern.
- When you use a 'Play the Brain for Change Tool' to change the brain's state to calm. This optimizes the brain for change. It is impossible to change in the state you're in; so, use a tool to shift the state and get into the power of now. Remember, in this moment, right now, using new skills, you can change your brain.
- Remember, Sh!t happens, so 'Play the Brain for Change' and turn it into "shift happens".
- Use Reward (Focus on the shift you just brought about, feeling good about that new approach to emotional pain. You just changed your brain state to calm- Good for You!)
- Positivity (Highlight the positive sensations in the state of feeling calm in the body. With your neuroplastic tools, you can create new calm states quickly that optimize your brain for positive change.)
- Novelty (Breaking those old patterns of anxiety and stress is possible just follow the science of brain-change. Create new neuroplastic emotional experiences that alter the patterns, surprise the brain, and cause you to feel good)

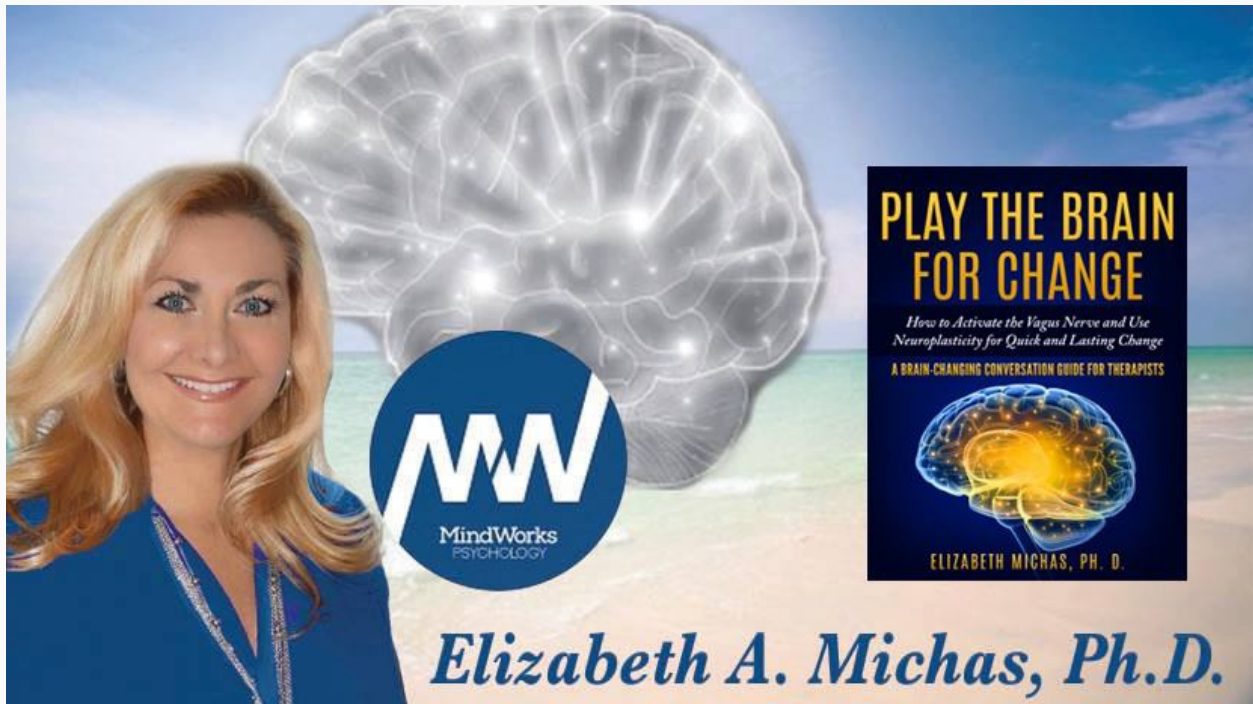
When you experience stress, perhaps you'll consider neuroplasticity and apply its principles to solve problems in thinking, feeling, or behaving. Welcome the applied brain science into the brain-changing conversations you have with yourself about anxiety/stress, and enhance this new brain-based way of understanding problems and promoting solutions.

Begin doing new stuff with your brain that supports the growth of new brain cells, creates new neural links, strengthens them and updates or reshapes old neural links. In the process, you'll encourage these new ways of getting to the root of stress and anxiety by empowering and self-directing neuroplasticity.

Next time you are feeling stress or anxiety, remember you're not what your brain is doing. Acknowledge this emotional pain response then influence it using a play the brain tool or technique, so you are in a position to do something new to change your brain and stress-proof it for life.

If you're interested in more tools and techniques, you may be interested in Emotional Pain Intervention (EPI®), an applied clinical neuroscience system





Elizabeth A. Michas, Ph.D.

With specialized training in clinical and neuropsychology, Dr. Elizabeth Michas has made it her life mission to illuminate the neuroscience of change and transformation, to help others rapidly recover from emotional pain and optimize their brains for life and love.

An expert in the neuropsychology of rapid resolution of anxiety, trauma, addiction, grief, and heartbreak, she's helped thousands of clients—and hundreds of therapists—in her 29 years as a Licensed Psychologist and as Founder/CEO of MindWorks Psychology.

She's trained and certified hundreds of mental health professionals since 2013 in an applied clinical neuroscience system, she developed and trademarked as Emotional Pain Intervention (EPI®). Dr. Elizabeth is also a Brain-based Coach, Consultant, and Author of *Play the Brain for Change: How to Activate the Vagus Nerve and Use Neuroplasticity for Quick and Lasting Change, A Brain-Changing Conversation Guide for Therapists* and the upcoming book *Lovestuck™: The Neuroscience of Healing Heartbreak*.

MindWorks Psychology, LLC is unique in that it offers new and innovative Brain-Based Coaching Services to help you feel better fast.

Step-by-step instruction on how to rewire your brain. Use neuroscience to promote rapid changes in emotions, behaviors, thoughts, and memories.

Achieve optimal nervous system balance, stress proof your brain and body, enhance immunity, resolve heartbreak, reach peak performance in career and relationships.

Follow the link below to register for Brain-based coaching. Once you pay you will get a confirmation email for your purchase, and a follow-up email from Dr. Michas with a link to schedule your meeting (Zoom Video or Phone Call).

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