

# Neuroplasticity: The Science of Rapid Recovery

By Juliet Mathison, Specialized Kinesiologist

Do you know that your brain can change? How long do you think it would take to make radical permanent change in a brain that appears to be stuck in a perpetual loop of debilitating stress and dysfunction, such as occurs with PTSD, anxiety, phobia, or any other unresolved trauma? Weeks? Months? Years? How about a couple of hours, or even, yes, minutes? If you ask someone who suffers from PTSD, or panic attacks how long they have had the condition, the answer will usually be “years”. Why haven’t they found relief yet? There is clearly much that is not yet widely understood about the amazing human brain. Thankfully though, new understandings are finally beginning to emerge.

The experience of emotion is processed in the part of the brain called the limbic system. The full range of human emotion has a broad spectrum of biochemical counterparts. These hormones and neurotransmitters communicate with and have a direct impact on our entire physiology. The emerging science of Psycho-neuro-immunology is currently exploring this concept.

We know that a surge of anger or terror will bring forth the release of stress hormones that put the body into the state of fight or flight. Conversely, feelings of deep peace, unconditional love, safety, gratitude, reverence, etc. will result in the secretion of oxytocin, the neurotransmitter of wellbeing. There is the biochemistry of stress and there is the biochemistry of wellbeing. They are two very different cocktails and the brain can readily make either of them.

So why does the brain of the war veteran with PTSD repeatedly serve up massive doses of stress hormones laced with tortuous images from decades ago? Why is the brain ‘stuck’ in this toxic stress loop and how did it get that way?

Let’s begin by understanding how stress becomes toxic in the first place. We have all experienced the powerful rush of adrenaline that occurs whenever the fight or flight mechanism is triggered. Under these circumstances, the body experiences a biological need for immediate physical expression of considerable intensity. Monumental acts of seemingly superhuman strength such as the example of the mother who is somehow able to lift the vehicle that is pinning down her child, are a direct result of the biochemical processes taking place in the body in response to intense emotion.

Experts in primate research observing this phenomenon have concluded that the stress hormones and other chemicals present in the bloodstream during conflict are appropriately metabolized and released by the body *during*, and *by means of* the process of physical expression. Blood samples and other tests were taken before and immediately after an act of stress that evoked intense physical expression. The results showed that the resting state biochemistry and all other body systems are restored to homeostasis as a direct result of the physiological burst of activity. It is interesting to consider at this point that the word ‘express’ means ‘to press out’, and quite literally so. When a three year old is lying on the floor having a temper tantrum, he is simply doing what his body is designed to do. He is ‘getting it out of his system’. Thirty minutes later it’s all forgotten. Nature’s Intelligence is at work.

However, within the parameters of today's society, the expression of intense emotion is seldom recognized for the vital role it plays in our development and wellbeing. In fact, most of us were taught from early childhood to suppress any emotion that is uncomfortable and therefore undesirable. The effect of this can be deeply damaging. There are also many cases where the intensity of an emotion is simply too much and the state of shock takes over. A temper tantrum isn't always an option. A soldier does not have time to process what has just happened, he is too busy surviving. His experience becomes frozen. The child who is being abused does not have the where-with-all to even begin to understand what she is experiencing. Her terrified state becomes frozen.

These kinds of scenarios inhibit the sequence of biological events that are necessary in order to metabolize and release the cocktail of stress hormones coursing through the body and brain. The toxic residue of un-metabolized stress hormones creates a short circuit in the brain that contains every detail of the traumatic event. It now acts like a program that has been installed on the computer; it is neurologically and bio-chemically wired in to the brain. The program may run constantly, as in the most severe cases of PTSD, or it may run only in response to certain triggers. Some triggers may be recognizable and others may not be.

It is possible to access these fused imprints in the brain. It is helpful to understand that they function holographically. There are ways to dismantle them safely and gently, allowing for the release of toxic stress and emotional charge. The plug can be pulled on the engine that keeps these programs running. Although there are several ways to accomplish this goal, there are a few processes which are particularly effective.

The visual cortex has an intimate relationship with how the brain processes and remembers emotion. Stimulation of certain eye movements in combination with neuro-linguistic exercises initiates the process of de-fusion. This process can be enhanced by the simultaneous inhalation of essential oils that contain plant chemicals called sesquiterpenes. These beneficial molecules pass directly into the limbic brain via inhalation. The amygdala gland is particularly responsive to these natural plant chemicals. The amygdala processes experiences of rage, fear, terror and excitement. The pineal gland can be stimulated by the application of light. Neurological polarity reversals known as 'switches' can be identified and corrected. The toxic imprint in the brain is multilayered. The dismantling of the imprint is therefore a multi-layered process. This does not take much time, it just takes understanding.

The end result is that the *facts* of what happened are still there in the file, so to speak, but there is no longer any emotional charge attached to the information. With the emotional charge gone, the biochemical driver is no longer re-creating the pattern. The brain is finally free to put the file away and get on with something else. At this stage it is appropriate to create a 'replacement file' of a positive nature. The brain will readily accept its new job description and will delight in the discovery that it is now able to turn on the oxytocin switch and start to carve new, healthy neural pathways of wellbeing. It has no trouble accomplishing all of this in a couple of hours. It is way smarter than we think it is!

It bears mentioning here that thus far we have only discussed the scientific principles that are operating when the brain is healing in this way. This is important, since the rational mind needs to

know these things and will expand as a result of learning. It is not, however, a complete picture. The psycho-spiritual aspects of the wound must also be given attention. Bear in mind that the abuse victim was 8 years old at the time when the traumatic imprint was fused into her brain. There is an aspect of her psyche that had been developmentally frozen at 8 years old. The integration of the inner child into the safety of the here and now requires insight, sensitivity and compassion. A whole person approach will bring about the deepest level of healing. Indigenous healing methods from various traditions refer to this reintegration of a dissociated soul fragment as 'soul retrieval'.

There is actually nothing non-scientific about soul retrieval, neither is there anything non spiritual about the science of changing your brain. They are just different perspectives of the same concept. In these times of unprecedented change and rapidly shifting paradigms, we are adjusting our lens of perception in a way that allows us to see a closing of the apparent gap between science and spirituality. After all, the only place that gap ever existed was in our own evolving understanding.

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