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Stress, the Brain, and the Neuroscience of Success

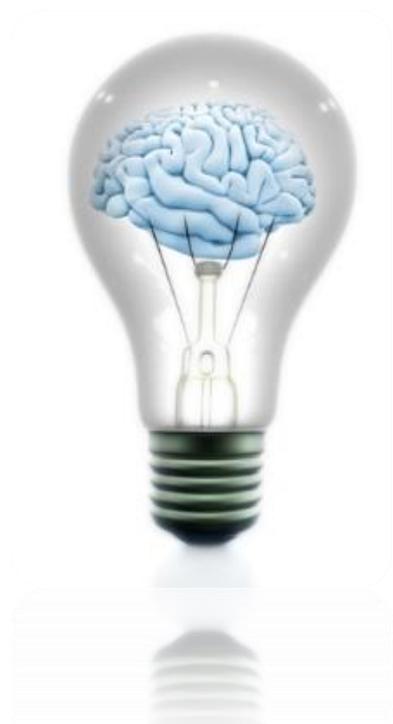
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A new field of neuroscience has emerged in the last ten years that has mapped the mental zone that can literally change the brain to quiet an overly active stress response system and simultaneously pave the way for higher brain networks to perform at optimum. The more we function from this mental zone, the less we stress, and the more our brain lights up with the mix of intelligence that predicts a successful life.

When these higher networks wire and fire together, humming away at the brain speed of a hundred million computer instructions per second, we not only succeed, we excel at every level of life: from career to family, from physical and emotional well-being to fully actualizing our talent and ability.

It's a brain generating the fluid and creative intelligence to achieve goals, along with the emotional and social intelligence to instill joy in our work, peace in our life, and harmony in our relationships. It's also a brain generating the homeostasis that promotes health and longevity.

And the key to all of these positive outcomes is building the mindset that transcends stress.



First, the Bad News You Need to Know

Stress hormones erode higher-brain networks, inhibiting you from succeeding fully at life. Chronic stress means the stress response system is turned on nearly full time, releasing toxic hormones into your system.

- Stress hormones shrink higher brain networks,¹
- switch our mood set point to negative,²
- impair the immune system, ruin the cardiovascular system, and damage chromosomes producing cancer cells and prematurely aging you,³
- kill brain cells,⁴
- and will eventually kill you, if you ignore stress.

Add together all the life threatening stress-related illnesses and you have the #1 killer of Americans. At work, stress dampens performance, thwarts teamwork, leads people to make bad decisions, and accounts for nearly half of turnover.⁵ The greater the stress at home, the more spouses will argue, criticize, withhold affection, and judge the relationship negatively, not realizing that stress is the real problem.⁶

Stress isn't something we should someday do something about. Yet 83 percent of Americans are doing nothing about it.⁷ And neither are organizations, and it's cutting into their collective brain power. Think about it; when a company hires an employee, they are actually hiring that person's brain and hoping it's a smart brain that will grow even smarter. Place that person in a high pressure work environment without the tools to transcend stress, and the likelihood is that he or she will lose brain capacity. There are two brain scans from the Mayo Clinic that show the impact of stress on brain function. One scan shows a brain beleaguered by stress. The other shows a brain functioning at optimum, lit up and pulsing with activity. The scan of optimal brain function looks like the massive networks of light you see when flying on a dark night over a metropolis like New York, while the stressed brain looks like the dim lights you see scattered here and there as you fly over Nebraska's farmland. The difference between the two brain scans is a good representation of the brain power a company has lost and could retrieve if they could solve the problem of stress.

The Good News in All this Bad News

The good news is neuroscience has identified a solution to stress that goes far beyond conventional stress management. This approach not only repairs the damage stress hormones cause, but also generates the neurological conditions that stimulate the growth of new connections within the higher brain that expand brain capacity, making people smarter, more innovative, and emotionally intelligent. The solution lies in the power of our mental state to rewire our brains. Change your mindset in specific ways and you can literally change brain structure to extinguish stress reactions and amplify higher brain function. The technical term for this change is *neuroplasticity*.

Here's a list of the positive change neuroplasticity can produce:⁸

- The usual networks that generate the brain's executive functions grow larger and become more fully integrated with other neural networks. This means you increased your skillfulness at planning, decision making, error correction, and troubleshooting. You build strong cognitive abilities and can think abstractly.
- Gamma wave activity is far better organized and coordinated, signaling the higher mental activity and heightened awareness found in peak performers.
- The right brain and the prefrontal cortex work together to elevate intuition and creative insight into practical innovation.
- Activity in the left prefrontal cortex, the seat of positive emotion, swamps activity in the right prefrontal cortex, the seat of negative emotion. This condition enables you to achieve a high level of emotional intelligence.
- There is greater activity in the center of the brain, especially the caudate and right insula, generating the social intelligence that sustains interpersonal resonance.
- Your physiology functions at optimum, securing a high level of health and energy.

Who in their right mind wouldn't want a change like that? Who in corporate leadership wouldn't want a work force operating at that level of brain function? If an individual or company is not actualizing the mindset that transcends stress to empower higher brain function, they are not maximizing their full extent of fluid, creative, emotional, and social intelligence. There is no excuse for not making this change.

Achieving the prescribed shift in mindset is easier than one might imagine, adding little to your to-do list. It's essentially about practicing a *to-be list*. Even better is the fact that change in brain structure happens quickly, within four to eight weeks. More and more, CEOs and HR executives are contracting with experts on neuroplasticity to heighten the brain power in their company. Soon, neuroplasticity will be the new competitive advantage. We'll call it the neuro-competitive advantage.

¹ Eduardo Dias-Ferreira, João C. Sousa, Irene Melo, Pedro Morgado, Ana R. Mesquita, João J. Cerqueira, Rui M. Costa, Nuno Sousa, *Chronic Stress Causes Frontostriatal Reorganization and Affects Decision-Making, Science 31 July 2009: Vol. 325. no. 5940, pp. 621–625

² S. T. Charles, J. R. Piazza, J. Mogle, M. J. Sliwinski, D. M. Almeida. The Wear and Tear of Daily Stressors on Mental Health. Psychological Science, 2013; DOI: 10.1177/0956797612462222

³ Robert M. Sapolsky, Why Zebras Don't Get Ulcers: An Updated Guide to Stress, Stress Related Diseases, and Coping, 2nd rev. ed. (New York: W. H. Freeman, 1998), 144-153.

⁴ Ibid

⁵ Wesley E. Sime, MPH, PhD, Stress Management: A Review of Principles, an online series of lectures on stress management, Lecture 1, University of Nebraska, Dept. of Health and Human Performance

⁶ L. A. Neff and B. R. Karney, "Stress and reactivity to daily relationship experiences: How stress hinders adaptive processes in marriage," Journal of Personality and Social Psychology 97 (2009): 435–50.

⁷ American Psychological Association, "Stress in America, Missing the Health Care Connection," February 7, 2013, pg. 5

⁸ Daniel Siegel, MD, The Mindful Brain (New York: W. W. Norton & Co., 2007), 41–44.