

STRESS: FRIGHT, FLIGHT OR FIGHT?

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vagal stress response or stimulation. Whenever these issues occur and especially when they are not resolved they tend to be stored in our brain and nervous system affecting both sensory and motor responses. Therefore, one can easily begin to see how stress can have a significant physiological/psychological effect on our bodies and minds and why it can be especially significant.

There will be a consequence to be paid among which is something we call a "chiropractic subluxation." This in turn can also lower one's threshold of what it will take in the future to set-off this reflex response again and again as well as affect other bodily systems and functions.

However, often even if our energy level is lowered our survival mechanisms can override this alarm function preventing us from acknowledging this fact. Instead we will react even if our energy level is low and we are stressed-

out causing us to further overload our stress system. So, the more our threshold is lowered the easier it becomes for our body to be overwhelmed by other events in our lives which can keep lowering our threshold until something has to give... "DISEASE!" Yes, and even mimic that heart attack mentioned earlier.

The Autonomic Nervous System (ANS)

The autonomic nervous system has to perform a balancing act between sympathetic excitatory and the parasympathetic inhibitory stimulation. In our fast paced modern society many of us seldom get to move past neutral to parasympathetic stimulation. When we constantly stimulate sympathetic driven responses which are largely conditioned reflexive responses to fight or flight we release adrenaline from our

adrenal glands.

Their activation is similar to using the passing gear in our motor vehicle. The adrenal glands secrete adrenaline into our blood stream from the top of our kidneys. They are essential for use in our fight or flight modes. We actually knew very little about our adrenal glands and the ANS until the past few decades. During this time, one of the things research scientists have learned is that this previously assumed automatically controlled system is able to be overridden by higher centers in the brain.

As mentioned earlier, this ability was provided to us as a part of our survival system in the wilds. We have also discovered that the ANS can learn and changes can result from past experiences, behaviors and situations. However, the ability of the ANS and the brain to learn from our reaction to stress may not fit our normal concept of learning. Instead, we find changes in the ANS and synaptic neuro-networks in the brain by how we react to different stresses, thoughts, and emotions.

In other words, we can actually change, reorganize or perhaps even re-program parts of the neuro-networks over time by how we think and react to certain stimuli. Therefore, we actually change or remodel the neuro-network arrangements. This can again even produce a toxic effect including cellular changes and even death to some of the cells... This once again, sounds like something D.D. Palmer said.

Application

Proof that stress hormones caused by certain stressful thoughts and experiences can actually cause cognitive, physiological and structural changes in the brain have become evident from research with cortisol which has been found to shrink the brain. Even in Post Traumatic Stress Disorder (PTSD) patients, brain diagnostic imaging studies using Functional MRI and PET scans actually show changes in their frontal cortex, amygdala and especially the hippocampus.

The hippocampus, a major part of the brain that is involved in stressful thoughts and situations, actually shrinks as compared to pre disorder or normal individuals without this disorder. These changes in the brain then appear to be related to a common set of traits, functional and behavioral changes in these patients as compared to normal behavior patterns in individuals who have not been affected by PTSD. In addition, certain senses like smells, sounds, and visual experiences can then act as "triggers" to these PTSD patients reminding them of the traumatic experiences causing them to remember and/or re-live the stressful situations.

Added to this, now there appears to be some very good evidence that chronic back pain may actually cause the gray matter of the brain to shrink. Researchers at Northwestern University reported in the November 2004 *Journal of Neuroscience* that they have conducted studies on chronic back pain patients where the gray matter of the brain, the part mostly responsible for memory and information processing, has actually shrunk up to 20 times faster in patients with chronic low back pain. Therefore, they propose that chronic low back pain actually speeds up the aging process in those individuals experiencing chronic low back pain. They also believe that this process contributes to depression and anxiety which affects the quality of life in these individuals.

Conclusion

Today, we have a very different response to the stress filled response stimuli. When we encounter stress we too may want to fight or flee but usually neither is socially acceptable. Instead of escaping and metabolizing the adrenaline and cortisol or catecholamines through the exercise of fight or flight, we become angry, upset, aggravated, and often cannot say or do what we feel.

We then become frustrated that we had to suppress or try to repress this innate reflexive response (vagal reaction or retort). We continue to pump adrenaline and cortisol as we ponder the incident over-and-over in our minds. Thoughts of retaliation and anger pump us up and more thoughts of retaliation may go through our minds as we con-

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