HOW STRESS AFFECTS THE BRAIN

When stress enters our brain, it short-circuits our memory cells like a black-out in New York. It is the #1 toxin in our lives and seems to be out of control. Whether it's driving in traffic or getting online, we are juggling a greater load of stressors than ever before.

Our bodies can't understand or don't want the velocity or high speed of modern life. Instead, they still yearn to go to sleep when it's dark and awake at dawn. They prefer a stride on the plains hunting for bison or laughing in a women's circle in a village rather than hearing teenagers blasting ACDC. They'd rather not multi-task; studies show that we lose up to 50% of our good judgment when multi-tasking.

The main problem is not the short-term effect being experienced, but the long-term effect on our bodies. Our brains are only meant to deal with stress for 30 seconds – not a few hours or years. Recent studies at Yale University have found that years of continuous stress are just as malevolent as one traumatic event: Stress can actually shrink your brain. It does this by reducing gray matter— the tissue containing nerve cells and their branching projections called dendrites. These regions are tied to emotions, desires, and impulses so when we are overwhelmed with stress, the gray matter compresses.

Strong humans with good genes, who believe they'll conquer stress, need to think twice: it's relentless stress not genetics that now determines longevity. Stress is endemic throughout our systems and most of the time its effects are not seen for years. It is particularly destructive to the brain

due to overproduction of cortisol – the most toxic agent that attacks memory. Cortisol derails glucose utilization away from the memory center making it hard to encode new information into short-term memory. Cortisol also breaks down the production of neurontransmitters that help retrieve a memory. So the real issue here is finding ways to detoxify from the cortisol overload.

One of the most extraordinary aspects of the brain on stress is how it affects decision making. A new report shows that acute stress affects the way the brain weighs the pros and cons, causing it to focus on pleasure and ignore the possible negative consequences of a decision. You might call it denial. This action occurs in the prefrontal cortex – the CEO – command center of decision making. Stress can disengage the frontal lobes and over time lead to impulsive, short-sighted thinking. Small wonder that people gravitate to the state of “hope” where they may find a reward as opposed to the hardcore reality of a situation. It’s the brain’s self-preservation system. So when you’re trying to make an important decision and your child is driving you crazy, time to lay that decision aside; your brain will gravitate to a comfort zone or conditioned choice, which ultimately may be the wrong one.

So how do we combat stress? We’ve all heard about de-stressors such as yoga, meditation, breathing exercises but the real difficulty is finding the time and place to do these. Some brain games such as Lumosity’s Speed Match is great practice for staying accurate and calm in time-sensitive situations. Speed Match involves remembering a symbol you just saw and matching it to a new one. Brain games help deflect stress by sheer focus

and giving your mind correct exercise. Brain games assist in controlling your thoughts while your level of cognition increases. If you're online and can't get to a brain game but need some relief, listening to Dr. Andrew Weil's *Symphony of Brain Waves* can signal your brain to slow down. In general, anything that will slow or decrease cortisol production in your body will prevent the destruction of brain cells.

Scientists insist that the brain is dynamic and can improve — but only if stress is dealt with in a healthy manner. Brain games can derail stress and help improve memory, but more importantly they help *produce* memory cells thereby decreasing the damage of stress. Stress will accumulate but it can be fought with exercise to increase oxygen flow into the brain. And when you can't exercise, the next best thing to sharpen your mind are brain games – a click away.