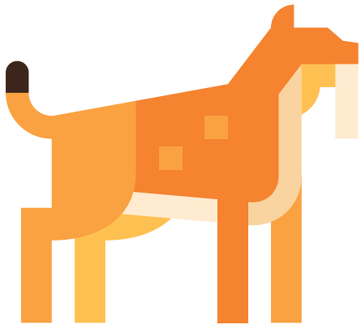


SURVIVING THE MODERN-DAY SABER-TOOTH

STRESS IN THE 21ST CENTURY

IT'S NOT NEWS THAT OUR ANCIENT BIOLOGY WAS NOT DESIGNED FOR THE MODERN-DAY STRESSORS WE ARE NOW HAVING TO FACE. THE RAPID CHANGE IN OUR ENVIRONMENT HAS SEEN OUR STRESS LEVELS SOAR TO THE EXTENT THAT WE ARE EXPERIENCING A CHRONIC STRESS EPIDEMIC.

Many of the health issues we are now dealing with can be attributed to this. Human performance expert and previous M2 contributor, Drew Knowles is starting his new series where he left off in 2015, by looking at ways to help us survive the modern-day saber-tooth by understanding what stress really is and how to deal with it.

Scene One: Ancient Saber-tooth - It's 50,000 BC. You're crouched at a watering hole on a sunny day and your underdeveloped brain is focussed on the feeling of the water. Suddenly, you hear a rustle in the bushes and from the corner of your eye you see something move. As you glance up a saber-tooth leaps out of the bushes. Without thinking, you sprint 20 metres to a tree. Just as the tiger is closing in, you swing yourself up and climb the tree. You perch up there, playing the waiting game. Your heart is racing, your legs and arms are pumped with blood, your breathing is heavy, and your mind is focused on staying alive. As the threat of death subsides, your heart slows down, breathing becomes calmer and you start to relax as you see the saber-tooth give up on eating you for lunch.

What just happened in your brain and body was a complex, intelligent and innate series of chemical reactions. Without having to think, you were able to explode into action, run like an Olympic sprinter, leap like an NBA basketball player, swing yourself up like a gymnast and climb like a monkey – all to survive being something's snack. This survival response is a product of everyday threats to our survival that evolved tens of thousands of years ago.

Scene Two: Modern-day Saber-tooth - You are sitting at your desk, staring at the computer on a Friday evening, struggling to put together an email about a deadline you're missing for the second time. Your feeling of mental pressure from a busy week goes up. Knowing you should have left already, you get a text from your partner asking when you'll be home as you're due for dinner at 7pm. You immediately feel agitated, knowing you'll be home late, upsetting your partner. A message 'pings' from your boss asking to see him urgently about your weekly report, increasing your feeling of stress. Then you pick up a call without thinking because you're distracted by worry...it's a client. You stay in the conversation for fear of losing a contract. While you're trying to listen, you're texting your partner that you'll be late and messaging your boss to say you'll be there in ten. When you're off the phone, you struggle to think coherently. You feel overwhelmed as the chatter in your head is now very loud - you're mentally arguing with your partner to defend yourself and preparing yourself for criticism from your boss. Then you start to beat yourself up. The feeling of failure creeps in and in your heightened fight/flight state, you feel like you just want to quit.

In both scenarios, the brain is reacting to a saber-tooth - real or perceived - triggering a fight/flight/freeze response. In other words, stress. 50,000 years ago this vital response gave us the capacity to survive short-term threats to our lives, but was not intended to be produced over long periods of time. An angry partner or boss don't actually pose a threat to our immediate survival, despite what our mind might tell us in the moment. It is the way our mind-brain-body perceives them that makes it so stressful.

My favourite author Robert Sapolsky, an established researcher on stress, explains this brilliantly in his book *Why Zebras Don't Get Ulcers*. "Stress is anything in the external world that knocks you out of homeostatic balance. Unlike us, the zebra has an episode of stress only when the lion is in pursuit...with three minutes of screaming terror…Otherwise, he is physiologically calm. Humans can get stressed simply with thought, turning on the same stress response as does the zebra, and when the stress response is turned on chronically we get sick."

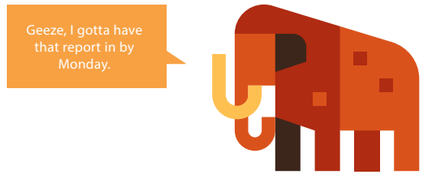
WHAT REALLY IS STRESS?

Here is a basic run down of what happens when a stressor triggers a stress response:

- The brain detects threat. As a result, heart rate increases, blood vessels constrict, and blood pressure rises.
- Stress hormones – cortisol and adrenaline/noradrenaline – are released.
- An increase in blood glucose levels for energy to the muscles and body (SUGAR!)
- An increase in blood lipid levels for converting into glucose (FATS!)
- An increase in bad cholesterol levels and reduction in good cholesterol levels (cholesterol is used in healing wounds and for making stress hormones)
- An increase in clotting factors (for preparation for potential wound)
- An increase in protein breakdown of muscle and connective tissue for conversion into glucose for energy.

A chronic stress response leads to most of the health issues we see today:

- Insulin resistance due to constant high blood glucose leading to Type II Diabetes



- Decreased immune function because the immune system is very energy expensive and won't save you from a saber-tooth attack
- Emotional memories and anxiety dominate (so we remember to look for the saber-tooth next time we are at the watering hole)
- Logical behaviour and short-term memory are inhibited
- An increase in emotional learning and instinctual behaviour and inhibition of factual learning (don't need to learn algebra to survive a saber-toothed tiger attack)
- Decreased ability to concentrate and focus attention – learning and attention deficit disorders and sleep issues are common
- Decrease in serotonin levels and increase in noradrenaline levels also negatively impacts the body
- Low serotonin leads to an increase in feelings of stress, anxiety and depression, being irritable, tired, listless, having tension headaches, decreased sex drive, lowered growth hormones (rapid aging), appetite changes, burnout and chronic fatigue
- Increase in sensitivity to sensory systems – being more sensitive to your environment – also results in higher sensitivity to pain
- Calcium loss from insulin resistance leads to less stimulation of bone growth and eventually osteoporosis
- Chronically elevated stress hormones also lead to cravings for the energy required for the stress response – SUGARS AND FATS!

Think how intelligent this all is to survive a real threat to your life like a saber-tooth. Second, think how detrimental it is when it goes on constantly.

Stress is not just a 'feeling' we get. We are not always conscious that our system has released stress hormones in response to a stressor, any mental or physical stimulus that causes stress to an organism.

ALLOSTATIC LOAD

This is the cumulative effect of chronic stress and the stressors we are subject to at any one time. The best way I have found to deal with stress in the 21st century is to manage my allostatic load .

The godfather of the work done on allostatic load, Bruce McEwen, says 'Stress' is an ambiguous term and has connotations that make it less than useful in understanding how the body can adapt or fail to adapt efficiently to experiences in daily life, including both daily hassles as well as major life events and abuse or trauma. Because chronically increased or dysregulated allostasis can lead to disease, we introduced the term 'allostatic load' or 'overload' to refer to the wear and tear that results from either too much stress or from inefficient management of allostasis, e.g. not turning off the response when it is no longer needed.

These are the simplest definitions of allostasis and allostatic load:

Allostasis: The ongoing adaptive efforts of the body to maintain stability (homeostasis) in response to stressors.

Allostatic Load: The physiological wear and tear on the body that results from ongoing adaptive efforts to maintain stability (homeostasis) in response to stressors.

EXERCISE: STRESS REALITY CHECK –WHAT IS YOUR ALLOSTATIC LOAD?:

Write down all the negative stressors that you have in your life right now , small or big. Rate each on a scale of 1 to 5. 5 being high and 1 being low. Now examine the effect they are having on your productivity and overall ability to live a wellness lifestyle. Between now and next month, try observing yourself and how you deal with these stressors. When you become aware of them, you can start mitigating the ones that cause the most stress.

You can try and improve your diet, exercise, affirmations, breathing techniques, meditation, etc, to manage stress, but you must fundamentally stop and look at the source of your stress and go to work on reducing those stressors. Then these techniques for managing stress will be much more effective in the long term. There are lots of great resources and apps out there to help you manage your stress levels. The best resource I have found is *The Healthy Mind Platter* by David Rock et.al.

Here is a summary of the seven neurocognitive activities he recommends we include in daily and weekly life to nurture the mind:

1. Sleep Time - Refreshing mind and body and consolidating memory.
2. Play Time - The joy of experimenting with life.
3. Downtime - Disconnecting for integration and insight.
4. Time-in - Reflection, attunement, mindfulness.
5. Connecting Time - The healing power of relationships.
6. Physical Time - Improving the brain's plasticity through exercise.
7. Focus Time - Attention management for performance.

Whether you think you are completely on top of your stress or you are at the other end of the spectrum, we are now a brain-powered economy and the need to understand how to maximise the use of our brain is crucial. If you learn about stress and how it affects the mind and brain, you will be well on your way to thriving in life as our world continues to speed up and demand more of us mentally.

We are a biological organisms in exchange with everyone around us and our environment. Every stressor has a consequence on us. While, unlike the zebra, we can override the constant assault from stress (to a point), if we don't learn to manage our allostatic load, it will impact our performance, health and levels of satisfaction. Whether you feel stressed or not, you may be.

Drew has over 20 years experience in the field of human performance and behaviour. His current company www.InfluenceEcology.com is the leading business education in Transactional Competence™, teaching the fundamentals of human exchange and influence to ambitious business professionals all over the world. Prior to this he coached many CEO's and Execs of some of NZs largest companies on dealing with stress and their mental performance, writing a 3-year series of M2 articles on this topic.

For previous articles go to drewknowles.com