

WHY IS IT IMPORTANT TO MANAGE STRESS?

Author: Adriana Covarrubias

How does stress affect the body, and what can you do about it?

The two sides of stress:

When you hear the word stress, does something positive or negative come to your mind? It seems that the word stress usually invokes a negative connotation. However, stress is not always something bad. As described below, when faced with a stressful situation or event, the body secretes epinephrine (or adrenaline). This helps the body to be in a state of physical and mental alertness. Therefore, in the short-term, we can benefit from the increased mental activity. Also, with the right amount of pressure, that is, when pressure doesn't exceed the individual's ability to cope, people can feel excited, creative and engaged in their activities^[1].

However, when stress is prolonged, that is, when stress persists and is long-standing, it can harm our bodies and increase the risk for health problems. Health conditions that are associated with chronic stress include heart attacks, high blood pressure (hypertension), diabetes, gastrointestinal disorders, anxiety and depressive disorders^[2]. Likewise, stress has been linked to alcohol abuse, burnout and chronic fatigue^[3]. Moreover, cardiovascular diseases, insomnia and its resulting fatigue, as well as negative health behaviours such as smoking and a sedentary lifestyle

can result due to sustained stress^[4]. In addition, there are organizational consequences when employees face chronic stress, including increased absenteeism and long term disabilities, high turnover of staff, decreased work efficiency, decreased productivity, low morale, decreased job satisfaction and increased benefit expenses^[4,5].

What happens inside our bodies in response to stress?

When our bodies sense a stressful or dangerous situation (a stressor), an automatic response is activated to deal with the stressful event: the stress response. This response allows the body to either fight or flee the perceived threat. For this reason, the stress response is also known as "fight or flight" response. And what follows is a series of hormonal changes, such as the secretion epinephrine (commonly known as adrenaline), norepinephrine (or noradrenaline) and cortisol, that are released by the adrenal glands, as well as metabolic changes, such as activation of the autonomic nervous system^[6]. The autonomic nervous system is divided into two parts, with opposite functions: the sympathetic nervous system and the

parasympathetic nervous system. The sympathetic nervous system helps the body to get ready for action: pupils dilate; salivation is inhibited; the vessels in the lungs dilate, allowing the entrance of more oxygen; lung airways relax; blood pressure and heart rate increase; changes in the pancreas occur to increase sugar levels in the blood; blood diverts to the muscles; digestion and gallbladder are inhibited; bladder relaxes; intestinal activity as well as orgasm are inhibited; and the pain message system in the brain is suppressed so that pain is not felt while facing the stressful situation^[2,7]. Once the individual perceives that the stressful situation has passed, the parasympathetic nervous system is activated to facilitate the recovery of the body and help to bring its internal balance. Some of its functions include to constrict pupils, stimulate salivation, slow heartbeat, constrict lung airways, stimulate digestion, stimulate gallbladder, contract bladder, stimulate activity of intestines and stimulate sexual arousal^[2,7]. The goal of the stress response is to restore homeostasis in the body once the stressful situation has been dealt with.

However, if stress is chronic and the stress response is activated frequently, dysfunctional responses can become apparent^[8], and lead to pathologies such as the ones described in the first section of this article.

So what can you do?

It is important to know your body and recognize when changes involved in the stress response are happening, such as elevated heart rate, dry mouth, sleep disturbances, gastrointestinal discomfort, increase of alcohol or tobacco consumption, etc.

Evidence-based techniques can help you to reduce stress and cope with stressors. Stay tuned for the next issue of *The Hypothesis*, where I will discuss a few tools and coping strategies that you can incorporate into your routine to manage your stress levels.

References:

1. Palmer, S., & Cooper, C. (2013). *How to deal with stress* (Vol. 24). Kogan Page Publishers.
2. Sapolsky, R. M. (2004). *Why zebras don't get ulcers: The acclaimed guide to stress, stress-related diseases, and coping-now revised and updated*. Holt paperbacks.
3. Tennant, C. (2001). Work-related stress and depressive disorders. *Journal of psychosomatic research*, 51(5), 697-704.
4. Nakao, M. (2010). Work-related stress and psychosomatic medicine. *BioPsychoSocial medicine*, 4(1), 4.
5. Colligan, T. W., & Higgins, E. M. (2006). Workplace stress: Etiology and consequences. *Journal of workplace behavioral health*, 21(2), 89-97.
6. Chandola, T., Brunner, E., & Marmot, M. (2006). Chronic stress at work and the metabolic syndrome: prospective study. *Bmj*, 332(7540), 521-525.
7. Howick, J. (2017). *Doctor You: Introducing the hard science of self-healing*. Hachette UK.
8. Chu, B., Marwaha, K., & Ayers, D. (2020). *Physiology, Stress Reaction*. StatPearls [Internet].

