

How to Stay Productive without Giving up Your Health?

Daria Polokainen

Student of the International Baccalaureate Diploma Program in Lyseonpuiston Lukio – Rovaniemi, Finland

Email: [daria.polokainen\[at\]gmail.com](mailto:daria.polokainen[at]gmail.com)

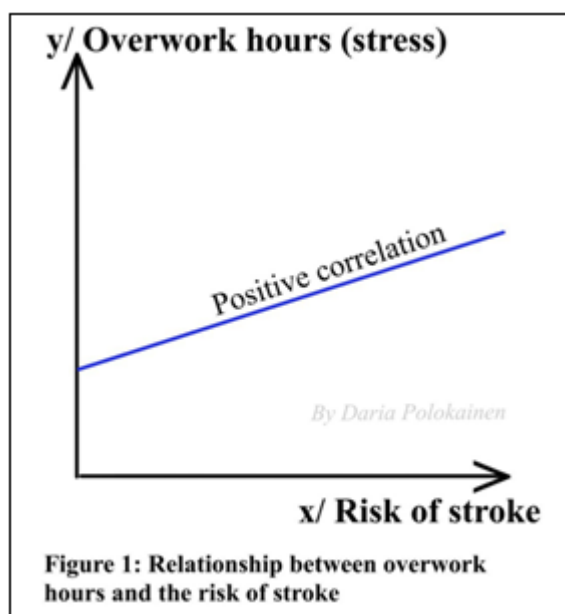
Abstract: *I have noticed that many students have gotten a false sense of productivity from sleeping less. Although it's commonly known that lack of sleep can have detrimental effects on our bodies, this article focuses on how the phenomenon of heightened production on little sleep can be explained. Furthermore, as the lack of sleep leads to raised stress levels, I describe the consequences of prolonged sleep deprivation or chronic stress on the human body. In a student's life, stress is almost unavoidable and sleep deprivation is only one source of stress. Therefore, the question of how to stay productive without giving up your health becomes essential for every student. To answer this question, this article indicates the relevance of stress perception, introduces some of the stress management techniques and explains how and why they work with corresponding student life examples.*

Keywords: sleep deprivation, stress management, RAS, HPA axis, Cognitive Appraisal theory

As a student, I am constantly surrounded by the academic world, which has become increasingly competitive. Therefore, it should come as no surprise that students are stressed and resting worse than ever. I have far too often heard my peers saying how they again studied all night and didn't get enough sleep. We all know that lack of sleep can have detrimental effects on our bodies, but why do we still keep torturing ourselves with sleep deprivation? The reason is that some have gotten a false sense of productivity from sleeping less. This has led them to conclude how they might work better when sleep-deprived. So the question is why so many of us feel a sense of heightened production on little sleep.

Stress – is a response of the body to any external demand. There is a significant amount of studies that exhibit a decrease in performance due to lack of sleep (e.g. Morales *et al*, 2019). Nonetheless, hyperactivity and restlessness are

hidden forms of a stress response and that's what can make you productive if you direct it into studying. These behaviours are the outcomes of the overexcited reticular activating system (RAS) – a network of nerves at the lowest (vegetative) level of our brain that connects the mind and the body. When functioning normally, the neural connections are used for processing and learning information and for ensuring the ability to focus. According to the Yerkes-Dodson Law, we need a certain amount of stress to perform the best we can. However, beyond this so-called optimal point, additional stress can cause feelings of anxiety and exhaustion, leading to disorganization and even burnout. So, while sometimes you can be very productive, due to the lack of sleep acting as a positive stress (eustress) factor, in the long run, the functioning of the RAS will go down, due to the turn of eustress to distress (severe or prolonged stress, such as chronic stress) (Selye, general adaptation syndrome, 1951).



Prolonged exposure to stress can cause the development of stress-related disorders, both mental and physical. One of them can be a cardiovascular group of disorders or disorders

of the heart and blood vessels. There was a meta-analysis of the studies from the USA, Finland, Australia, Israel, Sweden, The Netherlands, Belgium, Denmark, Germany, the

Volume 12 Issue 12, December 2023

www.ijsr.net

Licensed Under Creative Commons Attribution CC BY

UK and Northern Ireland done by Kivimaki *et al* in 2015. The findings showed a positive correlation between long working hours, causing stress, and stroke (figure 1). This was one of the studies on “karoshi” (from Japanese “death from overwork”), which can be explained by repetitive activation of the hypothalamic-pituitary-adrenal axis (HPA).

HPA axis is the body’s natural reaction to stress. Essentially it is a chain of physiological processes that formulates the stress response. It contains the work of the hypothalamus and pituitary gland in our brain, as well as the adrenal glands on top of our kidneys. The hypothalamus releases Corticotrophin hormone (CRH), which signals the Pituitary gland to secrete Adrenocorticotrophic hormone (ACTH) into the bloodstream, then it travels to the Adrenal cortex of the Adrenal Glands and prompts the release of Glucocorticoids, mainly cortisol, which results in the stress response activation (figure 2). The long-term stress keeps activating this process, which is therefore detrimental to all involved systems. That’s why activation of the HPA axis together with elevated cortisol levels over an extended time has been linked to an increased risk of various stress-related diseases, including cardiovascular diseases, metabolic disorders (Thorand, Löwel *et al*, 2005) and immune system dysfunction (Kiecolt-Glaser *et al*, 1984).

However stress is unavoidable, it is a part of our life as students, and sleep deprivation is only one source of stress. In student life, stress can also be caused by: the novelty of the situation (such as starting a new school, university or academic program), the unpredictability of the outcome (e.g. unknown format of the exam), a threat to your ego (for instance receiving a lower grade than expected) or the loss of control over the situation (like Internet disconnection during an online test) (The Centre for Studies on Human Stress). All of these stress factors can be the reason for decreasing efficiency in studies. So the question of how to manage stress without giving up your health and stay productive becomes essential.

To succeed in this task you should learn how to perceive the stress and how to cope with it. According to Lazarus and Folkman’s Cognitive Appraisal theory (1984), a potential stressor (external emotional event) causes 2 cognitive appraisal processes that happen almost simultaneously: primary appraisal and secondary one. Primary appraisal is your perception of the nature (positive/ negative/ neutral) of an event and the respective level of threat the event presents to you. Secondary appraisal is your judgement about your coping abilities and resources, sufficient to overcome a stressor. Meaning that if you think that writing an essay is a complicated or scary task and you are not sure that you can deal with it (for example due to low self-esteem), you will get stressed and won’t complete the task, even though you may have incredible writing skills. On the other hand, if you interpret the task as a challenging one, you may find it as an opportunity to express creativity, by therefore treating it not as stressful, but as an interesting event. Such a challenging way to deal with stress was named hardiness by Dr Salvatore and defined as “a combination of three attitudes (commitment, control, and challenge) that provide the courage and motivation needed to turn stressful circumstances from potential calamities into opportunities

for personal growth”. In the research by Ouellette *et al* (1985), hardiness was found to be the most important resistance factor and the best one to avoid stress-related illness.

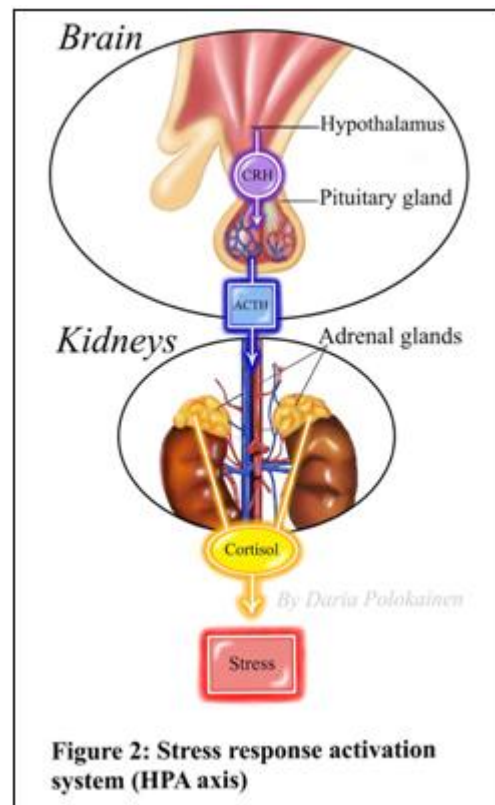


Figure 2: Stress response activation system (HPA axis)

Of course, the initial perception of a situation is strongly dependent on your previous experiences (successes/ failures) with the same kind of problems (Patel’s model of human stress, 1991). With this in mind, you can work on yourself to improve your perception of stressful situations, become more productive, reduce stress and therefore, improve overall well-being. Another path is to learn how to use stress management techniques, which will allow you to calm down faster and eventually change your perception of stressors, as you “collect” experiences. Some useful techniques may include:

- Problem- focused coping strategies**, such as taking baby steps. The division of a task into smaller pieces and setting a deadline for yourself for each part will help to overcome overwhelming stress from the overload of work that needs to be done. I use this strategy very often while studying on the IB (International Baccalaureate) Diploma program. Breaking every assignment into parts allows me to work on multiple of them simultaneously, by in fact dealing with one at a time. It can look like this: Introduction writing part of Chemistry IA, Conclusion part of Math IA, Analysis part of Psychology IA, Main body part of Chemistry IA, etc. IA refers to Internal Assignment – a longer essay in each subject. Problem-focused coping strategies help you to concentrate on the problem and actively solve it.
- Emotion- focused coping strategies**, for example, adjustment of expectations from yourself and life. Sometimes, we demand much more from ourselves than we can fulfil in reality. Accepting the fact that you

cannot make it as perfect as you wish at this moment and lowering your expectations, will release the stress from an emotional dissonance of underperformance. Emotion-focused coping strategies, provide you with short-term solutions to your distress, instead of the problem itself. They can be vital when we need to overcome the emotions or stress the problem is causing, in order to think of possible solutions. My real-life example is when I am panicking so much about an upcoming examination that I can't even start preparing for it. Realizing that at the current moment, I have to deal with much more than this exam only, will relieve me from the stress, by adjusting expectations from myself. I will "negotiate" with myself that it is okay to write one exam well instead of perfect. In this case, scheduling would help much more than an emotional balance, but to consider that option I first need to lower my stress to an optimal level.

- c) **Relaxation techniques**, for instance, autogenetic training. Autogenetic training – is a self-generated relaxation method, that allows you to relax your mind from relaxing your body. One of the forms of this training, the imaginary one, stimulated by an audio input works best for me, because as an artistic person I excel in imagination. For example, if I hear a summer song from past years, I get automatically involved in the visualization of the good, calming memories. After just ten minutes of imagining, I can release the stress from the current problem. With this fresh start, I get more energy and a better focus. It is essential in autogenetic training to not get interrupted and to free up the time (even though it wouldn't take long) to fully immerse yourself in sensations. In cases of high levels of involvement and motivation, relaxation techniques can be very effective, when dealing with anxiety or stress. For example, in the study of death anxiety (DA) among nursing students during the COVID-19 time, there was a significant decrease in DA after only one month of guided imagery relaxation technique.

In conclusion, even though lack of sleep can sometimes cause productivity, prolonged exposure to stress due to the deficit in sleep or other stressors in a student's life, would more likely cause serious physiological problems. That is why the solution to productivity should rather be based on stress-management techniques, than stress-causing methods, like sleep deprivation. Although, as humans, we need certain amounts of stress to be productive, one would be successful only by maintaining a healthy work-life (or study-life) balance.

References

- [1] National Research Council (US) Committee on Recognition and Alleviation of Distress in Laboratory Animals. Recognition and Alleviation of Distress in Laboratory Animals. Washington (DC): National Academies Press (US); 2008. 2, Stress and Distress: Definitions. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK4027/>
- [2] Morales J, Yáñez A, Fernández-González L, Montesinos-Magraner L, Marco-Ahulló A, Solana-Tramunt M, Calvete E. Stress and autonomic response to sleep deprivation in medical residents: A comparative cross-sectional study. *PLoS One*. 2019 Apr 4; 14 (4): e0214858. doi: 10.1371/journal.pone.0214858. PMID: 30947295; PMCID: PMC6448892.
- [3] World Health Organization. (n.d.). *Cardiovascular diseases*. World Health Organization. <https://www.who.int/health-topics/cardiovascular-diseases#:~:text=CVDs%20are%20a%20group%20of,heart%20disease%20and%20other%20conditions>
- [4] Kivimäki M, Jokela M, Nyberg ST, Singh-Manoux A, Fransson EI, Alfredsson L, Bjorner JB, Borritz M, Burr H, Casini A, Clays E, De Bacquer D, Dragano N, Erbel R, Geuskens GA, Hamer M, Hooftman WE, Houtman IL, Jöckel KH, Kittel F, Knutsson A, Koskenvuo M, Lunau T, Madsen IE, Nielsen ML, Nordin M, Oksanen T, Pejtersen JH, Pentti J, Rugulies R, Salo P, Shipley MJ, Siegrist J, Steptoe A, Suominen SB, Theorell T, Vahtera J, Westerholm PJ, Westerlund H, O'Reilly D, Kumari M, Batty GD, Ferrie JE, Virtanen M; IPD-Work Consortium. Long working hours and risk of coronary heart disease and stroke: a systematic review and meta-analysis of published and unpublished data for 603,838 individuals. *Lancet*. 2015 Oct 31;386(10005):1739-46. doi: 10.1016/S0140-6736(15)60295-1. Epub 2015 Aug 19. PMID: 26298822.
- [5] Popov, A., Parker, L., & Seath, D. (2017). Health psychology. In *IB Diploma Programme: Psychology Course Companion* (2nd ed.). essay, Oxford University Press.
- [6] Thorand B, Baumert J, Chambless L, Meisinger C, Kolb H, Döring A, Löwel H, Koenig W; MONICA/KORA Study Group. Elevated markers of endothelial dysfunction predict type 2 diabetes mellitus in middle-aged men and women from the general population. *Arterioscler Thromb Vasc Biol*. 2006 Feb; 26(2): 398-405. doi: 10.1161/01.ATV.0000198392.05307.aa. Epub 2005 Dec 1. PMID: 16322530.
- [7] Kiecolt-Glaser JK, Garner W, Speicher C, Penn GM, Holliday J, Glaser R. Psychosocial modifiers of immunocompetence in medical students. *Psychosom Med*. 1984 Jan-Feb;46(1):7-14. doi: 10.1097/00006842-198401000-00003. PMID: 6701256.
- [8] Kobasa, S. C. O., Maddi, S. R., Puccetti, M. C., & Zola, M. (1985, February). *Effectiveness of hardiness, exercise & social support as resources against illness*. Suzanne C. Kobasa's research while affiliated with University of Chicago and other places. <https://www.researchgate.net/scientific-contributions/Suzanne-C-Kobasa-35332862>
- [9] Guha, R. (n.d.). *Online free course: Alison*. Free Online Courses, Classes and Tutorials. <https://alison.com/topic/learn/72950>
- [10] World Health Organization. (n.d.). *Cardiovascular diseases*. World Health Organization. <https://www.who.int/health-topics/cardiovascular-diseases#:~:text=CVDs%20are%20a%20group%20of,heart%20disease%20and%20other%20conditions>
- [11] Sanadgol S., Firouzkouhi M., Badakhsh M., Abdollahimohammad A., Shahraki-vahed A. Effect of guided imagery training on death anxiety of nurses at

COVID-19 intensive care units: a quasi-experimental study. *Neuropsychiatry* *I*
Neuropsychologia/Neuropsychiatry *and*
Neuropsychology. 2020;15(3):83–88. doi:
10.5114/nan.2020.101290.

- [12] Maddi, S.R.; Kobasa, S.C. (1984). *The hardy executive: Health under stress*. Homewood, IL: Dow Jones-Irwin.

Author Profile



Daria Polokainen, Student of the International Baccalaureate Diploma Program in Lyseonpuiston Lukio – Rovaniemi, Finland, certified in Stress Management. My interest lies in Psychology Science, Social Engagement Projects, Sustainability and Arts.