

Your Brain on Adaptogens



Stress has a substantial impact on the function of your brain. Adaptogens help to normalize the body's functions under stress and can help protect mental performance, especially when you are feeling stressed.

Stress and the HPA Axis

How we react to stress is controlled by a complex interaction between the hypothalamus and pituitary gland in the brain, as well as the adrenal glands located above the kidneys. These three structures form the hypothalamic-pituitary-adrenal (HPA) axis which helps control mood, energy levels, body temperature, immunity, and more.

During a stressful experience, the hypothalamus cues the pituitary gland to release a hormone, which in turn signals the adrenal glands to release adrenaline and cortisol. When the levels of these stress hormones rise, the stress response is activated throughout the body.

Elevated blood pressure and heart rate, increased pulse and respiration, and many other physiological changes occur to give you a quick boost of energy. Areas of the brain associated with memory, emotion, and detecting threats switch into high alert.

These changes are a normal and healthy aspect of the body's stress response, particularly when the stress is short-term. However, stressors like job pressures or family demands can add a heavy burden of long-term stress. It's this type of chronic stress that can eventually take a toll on your health.

Chronic Stress and Your Brain

Chronic stress seems to be a hallmark of modern life and can cause dysfunction in both the HPA axis and cortisol secretion patterns. A prolonged stress response can negatively affect one of the most

important organs in your body, your brain. Constant stress can lead to decreased cognition, anxiety, and poor mental performance (1).

Life's stressors aren't likely to go away, but you can take steps to help your body cope with stress. Basic stress management techniques like regular exercise, taking time to relax, or simple approaches such as mindfulness can make a big difference. Adaptogens are another option for helping your brain and body adapt to stress.

Adapt to Stress with Adaptogens

Adaptogens are herbal ingredients that help to support mental and physical performance in stressful situations. Many of these herbs have a long history of traditional use in cultures throughout the world and have recently become a topic of active scientific interest.

Researcher and adaptogen expert Alexander Panossian has explained that adaptogens mimic elements of the body's stress response and help create an adaptive reaction to stress (2). This translates into increasing the work capacity of the brain with stress-protective or restorative effects. Dr. Panossian reasoned that the chemical structures of some Adaptogens are similar to hormones like adrenaline (2). Components of these herbs may also resemble corticosteroids and help to balance a normal stress response (3).

Adaptogens Support Mental Performance Under Stress

Mental performance suffers in stressful situations, but research suggests adaptogens can help maintain brain function even in stressful situations. In one double-blinded, placebo-controlled, randomized study, investigators tested a single serving of adaptogens on the mental performance of tired individuals performing stressful cognitive tasks (4).

The study participants received either one serving of a supplement that provided a mix of adaptogens including rhodiola, schisandra, and eleuthero, or a placebo. Next, the participants completed a long series of exercises designed to make them mentally tired before performing stressful cognitive tasks while investigators measured mental performance, such as attention, speed, and accuracy.

Compared to the group who received a placebo, the subjects who consumed adaptogens exhibited improved attention and increased speed and accuracy. There was also a tendency toward a reduced percentage of errors, which meant a higher quality of work being performed (4). In this study, a single serving of adaptogens supported improved mental performance for people who were tired and stressed.

Stress starts in your brain when the HPA axis is triggered by a challenging situation, but stress also impacts how well your brain functions. Too much stress, especially chronic stress, has a negative impact on health and mental performance. Life's stressors aren't likely to go away, which is why every brain can benefit from adaptogens.

References

1. Lupien SJ, Juster RP, Raymond C, Marin MF. The effects of chronic stress on the human brain: From neurotoxicity, to vulnerability, to opportunity. *Front Neuroendocrinol.* 2018;49:91-105.

doi:10.1016/j.yfrne.2018.02.001

2. Panossian A, Wikman G. Evidence-based efficacy of adaptogens in fatigue, and molecular mechanisms related to their stress-protective activity. *Curr Clin Pharmacol*. 2009;4(3):198-219. doi:10.2174/157488409789375311
3. Panossian A, Wikman G. Effects of Adaptogens on the Central Nervous System and the Molecular Mechanisms Associated with Their Stress-Protective Activity. *Pharmaceuticals (Basel)*. 2010;3(1):188-224. Published 2010 Jan 19. doi:10.3390/ph3010188
4. Aslanyan G, Amroyan E, Gabrielyan E, Nylander M, Wikman G, Panossian A. Double-blind, placebo-controlled, randomised study of single dose effects of ADAPT-232 on cognitive functions. *Phytomedicine*. 2010;17(7):494-499. doi:10.1016/j.phymed.2010.02.005