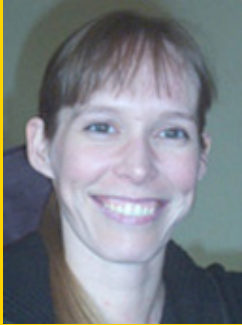


The Memory Practice Newsletter

Issue 21, September 2008



In this issue Dr. Michelon tells you about STRESS and the BRAIN.

Visit our website

www.thememorypractice.com

And learn about how to:

- Exercise your brain at home
- Organize a brain support group for your residents

The Effect of Stress on Brain Functions.

Intuitively, stress does not seem to be a performance booster. We have all fumbled through documents right in the middle of a stressful presentation or conversation, unable to find the document we wanted! On the other hand it feels like a little bit of stress may help arouse us. What does science tell us about the effect of stress on performance? Is stress good for memory?

What happens in your brain when you are stressed?

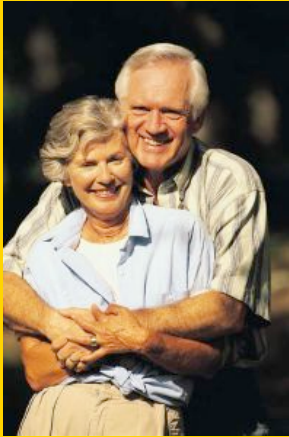
In response to physical or psychological stress, cortisol is released in the blood. Cortisol is often referred to as the "stress hormone". It is a corticosteroid hormone produced by the adrenal cortex in the brain.

In normal release, cortisol has widespread actions that help restore homeostasis (or equilibrium) after stress. It is involved in the activity of the immune system, the regulation of blood pressure, as well as in the inflammatory response. Cortisol has an effect on several substances in the body: insulin, amino-acids, gastric secretion, sodium, potassium, water, copper.

Acute versus chronic stress

Acute stress refers to the one time stressful event that elevates your production of cortisol for a limited period of time. This type of stress can have a positive effect on memory.

A stressful event usually triggers the production of cortisol but also adrenaline. The cooperation of the two can help create strong memories for the emotionally stressful event itself. For instance, it is likely that you remember where you were and what you were doing when you heard about the September 11th attack for the first time.



At The Memory Practice we develop brain exercises to help adults boost their memory and keep their brain fit.

Our exercises target all brain functions including memory. They are stimulating and fun.

With our Home Program **brain exercises are sent directly to your home.**

Contact us to set up a **FREE assessment** for your client, your loved one or for yourself!

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Chronic stress refers to a prolonged cortisol secretion. Higher and prolonged levels of cortisol are not good for the body. They can result in higher blood pressure, lowered immunity and inflammatory response and decreased bone density. They can also affect the brain itself.

Long-term exposure to cortisol can indeed result in damage to cells in the hippocampus, which is a brain structure crucial for memory formation. Thus chronic stress can result in impaired learning and memory.

Lucien and colleagues (2005) showed that in older adults, long-term exposure to high levels of cortisol is associated with both memory impairments and a 14% smaller volume of the hippocampus.

Solutions against stress

There are many tools available to assess one's level of stress.

If you feel out of control, irritable and anxious it is likely that you are experiencing high levels of stress.

What to do then to come back to normal cortical levels and good brain functions? Here is a short list of possible solutions...

- 1- Exercise
- 2- Relax
- 9- Get enough sleep
- 4- Appreciate the good things you have and have done
- 5- Maintain a good social network
- 6- Set goals and priorities

References

Lucien Lupien, S. J., Fiocco, A., Wan, N., Maheu, F., Lord, C., Schramek, T., & Tu, M. T. (2005). Stress hormones and human memory function across the lifespan. *Psychoneuroendocrinology*, 30(3), 225-242.