

Adrenal dysfunction is not commonly considered, but should be, as a brainstem disease. While there are many different factors affecting the functioning of the adrenal glands, maybe the most important facet is to look at what drives the functioning of the adrenals.

And the answer is...

Light activates the adrenal glands.

This has been proven through various scientific studies, including one published in the Cell Metabolism Journal under the same name as the results they found: <u>Light activates the adrenal gland: Timing of gene expression and glucocorticoid release</u>.

The study found that light was responsible for "activating" the adrenal glands, including regulating gene expression, such as turning on beneficial adrenal genes, and turning off harmful ones; and controlling the release of steroid hormones produced by the adrenal gland.

The adrenals glands secrete hormones that regulate many functions of the body, including stress response, metabolism, anti-inflammatory immune response, and even sleep.

The adrenal gland influences the suprachiasmatic nucleus located in the hypothalamus region of the brain, and this regulates our circadian rhythm, and the 24-hour cycle of biological processes.

The results should not come as a surprise, as light therapy has been used for decades to combat sleep disorders, including those suffered by shift workers, and even as a remedy for jet lag.

However, in those previous studies, it was assumed that light only affected the production of melatonin, but this study shows that it also affects the adrenal glands, and the production of other important hormones.

The stimulation of hormone production by light exposure also gives us clues as to why light therapy has been so effective in combating other major depressive disorders, such as bi-polar disorder, and depression.

The hormone production is believed to be directly linked to the upregulation of beneficial adrenal gland genes, and the downregulation of harmful ones. Overall, the researchers found that the expression was altered in over 200 different genes.

The changes in gene expression from exposure to sunlight produced a massive surge in glucocorticoids in both the blood and the brain, and this increased based on the light intensity.

Another study published in the <u>International Journal of Endocrinology</u> looked at the effects of different color bands of light, most notably blue and red, but they also referenced previous studies done on white light.

They did confirm that different colors will affect the production of cortisol in the body. This shows the benefits of light therapy, but we can of course improve our adrenal health through sunlight exposure.

How much light do you need? The original referenced study showed that you don't need very much to stimulate hormone production, and near maximum levels were achieved with as little as 40 lux light strength.

So, if you want to activate dozens of beneficial adrenal genes in just minutes, and ramp up the production of the necessary adrenal hormones, the solution is simple: Get ample sunlight exposure, or artificial light exposure if you live in less sunlit parts of the world.

For further information on adrenal dysfunction causes and solutions, please visit HealthGlade.com