



Dear Dr. Hoo,

I've been undergoing a lot of stress lately and gaining weight which I can't seem to lose. Do you have any suggestions?

Ongoing stress results in the production of cortisol, a steroid hormone produced from the adrenal glands. Cortisol mainly functions to regulate energy production and mobilization; it does so by selecting the right type and amount of macronutrients (carbohydrate, fat or protein) that is needed by the body to meet the physiological demands (eg. stress) that is placed upon it. This hormone mobilizes energy by moving the body's fat stores from one location to another to provide fuel for muscle tissues.

Under stressful conditions, cortisol can provide the body with protein for energy by converting amino acids in muscle into useable carbohydrate (glucose) in the liver. Additionally, it can move fat from storage relocate it to fat cell deposits deep in the abdomen. Cortisol is also known to facilitate the growth of mature fat cells.

Animal and human studies have demonstrated that cortisol injections are associated with increased appetite, cravings for sugar, and weight gain. It has been postulated that cortisol may directly influences food consumption by binding to receptors in the brain that triggers an individual to eat food that is high in fat and/or sugar. Cortisol may also indirectly influence appetite by regulating other chemicals that are released during stress such as corticotrophin releasing hormone (CRH), leptin, and neuropeptide Y. High levels of neuropeptide Y and CRH and reduced levels of leptin have been shown to stimulate appetite.

Addressing the underlying cause of a condition, a fundamental principle in naturopathic medicine, is essential in considering treatment options. A good place to start is to identify the stressor and either remove it, or find more effective ways to manage the stress such as exercise or a meditative practice. Herbal preparations known as nervines and adaptogens can also help to modify your stress response and adapt to stress in a more effective manner while nutritional counseling will help you to make appropriate dietary modifications.

If you or someone you know can relate to this, please consult with your healthcare provider to ensure that your healthcare goals are addressed or call us for further information.

Dr. Aaron Hoo

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