

Does Your Patient Need Thyroid and Adrenal Support?

A PLAUSIBLE SOLUTION FOR PATIENTS AFFECTED BY CHRONIC STRESS.

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Although clinical trials published in peer-reviewed scientific journals are lacking, many holistic practitioners have documented improvement in patients who have a constellation of stress-related symptoms after providing them with oral agents that support thyroid and adrenal function. Dating back to the work of stress researcher Hans Selye, health practitioners have been aware that chronic stress often results in oversecretion of ACTH from the pituitary gland. In turn, this has been shown to cause a greater release of cortisol from the adrenal cortex, one aspect common to the alarm and adaptation stage of the stress response.

High circulating levels of cortisol have been documented to contribute to a number of health problems and complaints, such as:

- tendency to gain abdominal fat;
- high frequency of the flu and other respiratory diseases, with symptoms tending to last longer than usual;
- reduced sex drive;
- lightheadedness when rising from a horizontal position;
- lack of energy in the mornings and in the afternoon (3 p.m. to 5 p.m.);
- difficulty getting up in the morning; may need coffee or other stimulants to "get going";
- feel better suddenly for a brief period after a meal;
- increased symptoms of PMS for women; periods are heavy and then stop or almost stop on the fourth day, but start again on the fifth or sixth day;
- feel significantly better when stress is relieved, such as when on a vacation; and
- loss of strength and lean mass.

Many of these symptoms and complaints are explained by the overstimulation of cortisol on various tissues. For example, high levels of cortisol are known to increase the deposition of fat in abdominal fat stores, weaken the immune system, and compete with testosterone and other reproductive hormones for binding sites on nuclear receptors in many cells, thus breaking down lean mass and impairing sex drive. High levels of cortisol also cause bone demineralization, which can contribute to osteoporosis and produce insulin resistance with high sugar levels (blood glucose), aggravating or promoting metabolic syndrome and/or diabetes.

Adrenal-Thyroid Connection

On a molecular level, it is important to note that cortisol has a key interaction with thyroid hormone. One of cortisol's more important functions is to act in concert or synergy with thyroid hormone at the receptor-gene level.

As stated by David Zava, PhD, a biochemist and author (interview in the *John R. Lee, M.D. Medical Letter* and widely republished online): "Too much cortisol, again caused by the adrenal glands' response to excessive stressors, causes the tissues to no longer respond to the thyroid hormone

signal. It creates a condition of thyroid resistance, meaning that thyroid hormone levels can be normal, but tissues fail to respond as efficiently to the thyroid signal. This resistance to the thyroid hormone signal caused by high cortisol is not just restricted to thyroid hormone but applies to all other hormones such as insulin, progesterone, estrogens, testosterone, and even cortisol itself. When cortisol gets too high, you start getting resistance from the hormone receptors, and it requires more hormones to create the same effect. That's why chronic stress, which elevates cortisol levels, makes you feel so rotten – none of the hormones are allowed to work at optimal levels."

As a result, many patients with high cortisol levels due to chronic stress show signs of low thyroid, which often overlap with symptoms of high cortisol levels, such as the following:

- easy weight gain;
- slower metabolism;
- changes to hair, skin and nails;
- lowered resistance to infection; and
- chronic feeling of fatigue not remedied by increased rest.

Thus, it is easy to see why many patients with adrenal symptoms are often suspected of having an underactive thyroid gland. When thyroid function tests come back normal, doctors are often stumped as to the cause of the symptoms, and may be tempted to attribute the problem to mild or moderate depression and place the patient on antidepressant drugs.

Adrenal and Thyroid Support Nutrients

In patients presenting with a combination of vague symptoms centered about any combination of the signs, symptoms or complaints stated above, it may be worth providing them with adjunctive nutritional management aimed at supporting adrenal and thyroid function. With respect to toning down cortisol release from the adrenal glands and supporting adrenal health in general, the combination of adaptogen herbs and specific vitamins and minerals has been shown to be useful.

Adaptogen Herbs: To date, there are no drugs that can tame the impact of stress on the body, but nature has provided us with "adaptogens" that are proven to improve the body's natural ability to combat emotional and physical stress. Adaptogens, first discovered in 1947, by the Russian scientist Dr. Nicolai Lazarev, decrease the output of cortisol during chronic stress and produce other invaluable effects on the physiology of the immune system, brain and other tissues. Several herbs contain adaptogens, but those such as ginseng and licorice should be avoided due to the many documented serious side effects and drug-nutrient interactions associated with their use. The three most effective and safest adaptogen herbs include:

- *Ashwaghandha*: a medicinal Indian herb shown to decrease blood cortisol levels by up to 26 percent in chronically-stressed individuals. This 2005 study also showed a decline in fasting blood sugar, and an improved lipid profile. The active constituents in ashwaghandha are also powerful antioxidant and anti-inflammatory agents, and have been shown to boost immune function, improve mental functioning, and enhance libido – all anti-stress adaptogen features
- *Rodiola*: an herb that grows in cold regions; has been shown to exert anti-fatigue effects, increased mental performance, and ability to concentrate in chronic fatigue sufferers ((Darbinyan, et al., 2000; Spasov, et al., 2000; Shevtsov, et al., 2003). *Rhodiola* is categorized as an adaptogen by Russian researchers due to its observed ability to increase resistance to a variety of chemical, biological, and physical stressors. Its purported benefits include antidepressant, anticancer, cardioprotective, and central nervous system enhancement (Kelly GS, 2001).
- *Shisandra*: extensive experimental research in Russia has documented this herb's numerous

adaptogen properties, including positive effects on the central nervous, sympathetic, endocrine, immune, respiratory, cardiovascular, and gastrointestinal systems, prevention of atherosclerosis, high blood sugar and other outcomes, under periods of chronic stress (Panossian A, et al., 2008). The adaptogens in this plant have been shown to control cortisol levels during periods of chronic stress and to increase exercise capacity and mental function upon exposure to other environmental stresses in both animal and human studies (*Herbal Medicine, Healing & Cancer* by Donald R. Yance Jr.)

Other Adrenal Nutrients: In addition to these stress-fighting herbs, vitamin B₆, pantothenic acid, magnesium, vitamin C and zinc are critical to the prevention of adrenal fatigue and adrenal damage during periods of chronic stress. The adrenal support formula I recommend includes the following, taken once daily (twice for the first two weeks): rodiola - 100 mg (standardized to 3.5 percent total rosavins); ashwaghandha - 375 mg (standardized to 3 percent withanolides); schisandra - 100 mg (standardized to 2 percent schizandrins); vitamin B₆ - 25 mg; pantothenic acid - 25 mg; magnesium - 100 mg; vitamin C - 50 mg; and zinc - 5 mg.

In cases in which thyroid function tests are within the normal range, but symptoms of low thyroid function are apparent, I suggest you also include a supplement shown to support thyroid gland and thyroid hormone function, containing the following nutrients (taken twice daily):

- *Coleus forskolin* (250 mg, standardized to 10 percent forskolin content) - an herb shown to increase the release of thyroid hormone from the thyroid gland in experimental studies;
- *Iodine* (150 mcg) - an essential mineral that is a critical component of thyroid hormone;
- *Tyrosine* (250 mg) - the amino acid that is the essential building block from which thyroid hormone is made in the thyroid gland; and
- *Gum guggul* (150 mg *Commiphora mukul*, standardized to 2.5 percent guggulsterones) - an herb shown to increase conversion of T4 to T3, the most active form of thyroid hormone.

Many patients complain of chronic fatigue, easy weight gain, frequent colds and flus of long duration, low body temperature, mental foggiess, skin, hair and nail changes, and/or show signs of high blood sugar (glucose), even with controlled diet and exercise. When you suspect that the constellation of symptoms, signs and complaints may be related, in whole or in part, to the impact of chronic stress, a clinical trial using adrenal (and sometimes thyroid) support nutrients may be the correct course of action.

In my experience, in many cases the patient will feel improvement within the first 4-6 weeks of intervention. For practitioners who want to probe deeper and understand more objective parameters of diagnosis, my next article will discuss the lab tests available to help practitioners discern adrenal involvement in these cases, as well as a cutting-edge way to interpret thyroid blood tests in regards to thyroid dysfunction and hypothyroidism.

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