

## THE ADRENAL GLANDS AND YOUR HEALTH

The adrenals are triangular-shaped hormone glands that sit on top of the kidneys. In fact, the word “ad-renal” is just Latin for “over the kidney.” While they are not as familiar to the public as, say, the thyroid; there is increasing evidence that they may play the predominant role in the hormone system. In other words, adrenal dysfunction may actually cause many other hormone problems and imbalances. These glands have two distinct parts; the outer layer, called the cortex, and the inner portion, called the medulla. The cortex produces cortisol, also referred to as hydrocortisone, aldosterone, a hormone involved in sodium and water balance, and all of the sex hormones. This may surprise some people but this fact plays a major role in female hormone imbalances, especially menopausal problems, which I will cover in another handout. The medulla primarily makes adrenaline, our acute stress adaptation hormone.

The most important hormone for our discussion is cortisol. Cortisol affects blood sugar balance, which itself is critical for proper brain function among other things, blood pressure control, and the complex relationships of protein, fat, and carbohydrate metabolism. It keeps blood sugar up during times of fasting or stress by promoting the breakdown of protein and converting it to sugar. Thus, chronically high levels of cortisol ultimately result in the long-term breakdown of muscle and connective tissues that maintain the structure of the body. In essence, cortisol is our chronic stress adaptation hormone as the body sacrifices tissues that are not essential for survival to protect those that are. It is also, as suggested by its name, our body’s own natural anti-inflammatory agent.

Conventional medicine, at this time, only recognizes three states of adrenal cortisol producing function; either you have a normal gland, you have complete adrenal failure, known as Addison’s disease (For those old enough to remember, this is what JFK had.), or you have a pathologic adrenal excess known as Cushing’s disease, usually caused by a tumor. It is fascinating that, while medicine recognizes mild deficiency states for almost every other type of hormone, e.g. mild hypothyroidism, there is no acceptance for the notion of “mild hypo-adrenalism.” Mild excess cortisol production due to stress is acknowledged to exist but that is about as far as it goes.

Through the work of naturopaths and biochemical nutritionists, we have learned that milder “functional” states of adrenal deficiency and excess exist. As the name implies, these are disorders of function, not the pathological disease states addressed in conventional medicine. It is becoming more and more apparent that these dysfunctional states are extremely common and also play a large role in many of today’s more challenging health problems including chronic fatigue, fibromyalgia, multiple chemical sensitivity, and autoimmune problems to name a few. Author James L. Wilson calls adrenal fatigue “The 21<sup>st</sup> Century Stress Syndrome.”

What appears to be happening is that, under the chronic stresses of modern living induced by our diets, lifestyles and environmental toxins, the adrenals are forced to



**THE KLEIN  
CENTER FOR  
Holistic Medicine**  
Joel B. Klein M.D., P.C.

*Balanced therapies for ultimate health*

**Joel B. Klein M.D., P.C.**

**719.457.0330**

620 South Cascade Avenue  
Colorado Springs, CO 80903

produce a high amount of cortisol. ***In my experience, the three major causes of adrenal excess in most Americans are chronic mental/emotional stress, malabsorption from GI tract imbalances (see separate handout) and the large blood sugar swings caused by excessive dietary intake of sugar and processed carbohydrates.*** These high levels of cortisol can result in any or all of the following: anxiety, depression, fatigue, high cholesterol and/or triglycerides, muscle wasting, weight gain around the waist, gastrointestinal disturbances, skin problems, reduced fertility and overall decreased sex hormone function. High cortisol levels also inhibit the proper use of thyroid hormone causing additional symptoms of hypothyroidism including fatigue, weight gain, cold intolerance, hair loss, and concentration and memory difficulties.

Over time, a number of complex interactions between the hormone controlling centers in the brain and the adrenals themselves cause cortisol levels to decline. As a result of this progressive adrenal fatigue, any of the following may develop: increased fatigue, weight loss, anorexia, and an increased tendency towards inflammation and, thus, increased risk of heart disease and inflammatory disorders like autoimmune diseases, allergies, and asthma. Of special note is that those whose mothers were under significant stress while pregnant with them may have already reached this stage by the time of birth and, therefore, may have permanently sensitized adrenals that are more prone to “burning-out” throughout their lives.

Diagnosis of adrenal dysfunction is done primarily by history supported by physical examination and laboratory testing via blood, saliva, or urine. Each of the testing modes has its own strengths and weaknesses that we can discuss in person, if needed, to determine which is best for you.

***Treatment of adrenal dysfunction involves, first and foremost, attitude and lifestyle changes to correct the things that got you there in the first place!*** This means examining all of the sources of stress in your life including relationships, job, money, etc. Since much of the stress component of these issues is ultimately self-inflicted, “adrenal burn-out” is frequently a life-transforming process as the adrenals cannot ultimately be healed until your life is healed. Time for rest and self-nurturance is critical; as is adequate sleep. By that I mean 8-9 hours of restful sleep a night even if it requires medication in the beginning! This often requires learning to set appropriate boundaries for those who have learned to repeatedly depend on you. This can, for some, result in the humbling realization that you may have unconsciously trained them to depend on you to satisfy your own needs for praise and acceptance and your *need to be needed*. This is especially common for those people in the helping professions.

Additional treatment of adrenal dysfunction includes dietary changes such as eating regular, balanced meals with some protein at every meal, avoiding caffeine and other stimulants, eliminating “the whites,” white sugar and white flour, and limiting high glycemic foods like white potatoes and carrots. A number of herbal preparations and nutritional supplements can be very helpful. These do not, however, substitute for the lifestyle and dietary changes. In fact, without these, herbs and supplements will likely do very little. In severe cases, prescription hydrocortisone is used, such as in Dr. Jacob Teitelbaum’s protocol for Chronic Fatigue Syndrome and Fibromyalgia.

Recommended resources:

Wilson, James L. [Adrenal Fatigue: The 21<sup>st</sup> Century Stress Syndrome](#)

Schwarzbein, Diana The Schwarzbein Principle II  
Teitelbaum, Jacob From Fatigued to Fantastic and <[www.endfatigue.com](http://www.endfatigue.com)>