

Adrenal Health **By Kim Balas**

The adrenal glands are two small glands that sit over the kidneys and are responsible for secreting over 50 different hormones—including epinephrine, cortisol, progesterone, DHEA, estrogen, and testosterone. The adrenals are responsible for many tasks which include maintaining energy, transport, hormone production, inflammation recognition and control, protein movement through the liver, regulating stress, sodium retention, potassium excretion, bone density, stimulate the breakdown of stored fats and glycogen into glucose, elevating blood sugar levels. electrolyte balance, maintaining pH, allergy response, mineral transport, insulin transport, supporting thyroid function, communication with the hypothalamus and maintaining fluid balance.

The cortex or outer portion of the adrenal gland produces cortisone, which helps to regulate blood sugar, energy levels, and muscle function. In stressful situations, levels of cortisone rise, setting off a chain-reaction of changes in the body. It is believed that lowered immunity, fatigue, difficulty sleeping, and other symptoms of stress are directly related to the adrenal reserves of cortisone being used up. The cortex also makes small amounts of the sex hormones testosterone, progesterone and estrogen.

The medulla or inner part of the adrenal produces adrenaline. This speeds up the breathing rate, raises blood pressure, and increases heart rate in response to stress.

Adrenal Stress/Exhaustion

With such important jobs to do it is easy to see why it can become exhausted. Stress, lack of sleep and hormone imbalance impacts how the adrenal gland functions. With too much prolonged stress, however, the adrenals can become exhausted from continual hormonal output. You can have emotional stress or chemical stress resulting from mercury leakage from silver dental fillings, chronic exposure to other heavy metals and pesticides, and food allergies. And you can have physical stress from over-training, long hours of work or having an infection.

There is a domino effect starting with adrenal exhaustion. There is a hormonal effect in many ways.

In the first stage of stress there is an increased secretion of the cortisol hormone to try and adapt to the situation. High cortisol causes insulin resistance and insulin resistance causes high cortisol. When you have insulin resistance, you gain weight, crave sugar, and are constantly hungry, You also get fatigued after eating a high carbohydrate meal because lots of insulin has been secreted, while the cells are no longer responsive to insulin. The body converts carbohydrates into fat, which requires energy. This accounts for the fatigue after meals.

Another symptom of high cortisol is the inability to fall asleep. High cortisol turns off melatonin which leads to interrupted sleep patterns. The cells require glucose to work even when you are sleeping. That's the job of cortisol, to tell the liver to keep glucose going to the cells. If the cortisol is erratic the body increases its demand for and if the cortisol levels are very low then the adrenal medulla is activated into an emergency mode. When the glucose gets secreted, your blood sugar goes up, you wake up, and now you have an adrenaline rush. You can't go back to sleep.

With adrenal stress, the brain becomes less sensitive to estrogen when there is high cortisol, resulting in hot flashes in women who had previously been in perfect hormonal balance. Women often exhibit both symptoms of excess cortisol, resulting from years of chronic stress, and symptoms of adrenal exhaustion resulting from the inability to maintain adequate production of adrenal steroids. Cholesterol is a precursor to the adrenal cortex and sex hormones. Progesterone is a precursor to aldosterone, the mineral corticoid that regulates fluids in your cells, and cortisol. A decrease in progesterone relates to a drop in cortisol production, creating vicious cycles.

Increased cortisol contributes to high blood pressure. For men high cortisol will cause decreased testosterone. Cortisol will block testosterone from working at the cell receptor sites. Weight will increase and sex drive will subside.

There will also be symptoms of low thyroid function. When you have low thyroid, your hair falls out, you are constipated, your skin feels very dry, and you feel cold most of the time. The adrenals and thyroid gland work closely together. If your adrenals are weak, your thyroid might slow down to compensate. This often causes low blood pressure. Low blood pressure is not desirable or normal. High BP is usually more acknowledged and we forget that low BP can also cause problems. It is a symptom of dysfunction in the body. Many women are put on antidepressants because of low BP readings and complaints of fatigue which can be from poorly functioning adrenals.

Increased cortisol also occurs as a result of chronic inflammation, and chronic pain. The liver has a reduced ability to detoxify, promoting a leaky gut, with consequent auto-immune reactions within the body. Increased cortisol can cause ulcers in both the stomach and small intestine. Bone density can go down.

Additionally, high cortisol will suppress the pituitary's ability to release LH. LH is essential for ovulation. So if cortisol suppresses ovulation, you're going to get infertility and no progesterone.

Indicators

There are many indicators in adrenal stress. Are you usually tired when you wake up, but still "too wired" to fall asleep at night? Is it hard for you to relax or to

get exercise? Do you find that you get sick more often and take a long time to get well?

There are distinct energy patterns in adrenal fatigue. Along with consistent morning fatigue, most experiencing this will not feel ready to be alert until around 10 am and will not usually feel fully awake until after lunch. The energy levels usually swoon again around 2-4 pm but will pick up again around 6 pm. This fluctuation continues throughout the evening by being tired by 9 pm and sometimes napping thus creating difficulty falling asleep and then waking intermittently during the night. These are the people that tend to be labeled “night owls.”

Some other key signs of adrenal imbalance include salt cravings, increased blood sugar under stress, increased PMS, perimenopausal, or menopausal symptoms under stress, mild depression, lack of energy, decreased ability to handle stress, muscle weakness, absent mindedness, decreased sex drive and mild constipation alternating with diarrhea.

When compounded with poor nutrition - foods low in minerals or processed, alcohol, caffeine, nicotine, stimulants and other allergy medications the adrenals can easily become severely depleted or exhausted. The adrenals perceive low blood sugar as a major stress. When highly processed carbohydrates are eaten like sugar, sweets, sodas or white-flour, blood sugar rises quickly. The pancreas then responds to the high blood sugar by overdoing its insulin production - which in turn takes sugar out the blood and causes it to drop too low. The adrenals react to this situation by releasing stress hormones to raise the blood sugar. By eating healthy, whole foods we can give the adrenals an opportunity to recharge and do their job of providing us with even, steady energy. It's important to eat a balance of protein, carbohydrates and fats in each meal.

These are signs that you may need Adrenal support:

- § Feel groggy in the morning and have difficulty getting out of bed
- § Rely on caffeine to get going
- § Cravings for sugar and stimulants to keep you going
- § Mind chatter in the evening making it difficult to go to sleep
- § Feel exhausted and still can't fall to sleep
- § Decreased libido
- § Low blood pressure, muscle weakness, low metabolism, or excessive skin pigmentation such as dark freckles.
- § Infertility, irregular menstrual cycles, anovulatory periods, or fibrocystic breasts.
- § Depression

- § Constant fatigue, weakness, and inability to cope with stress.
- § Lack energy or alertness
- § Poor memory
- § Cracked skin on heels
- § Nervous sweating in hands and feet
- § Brittle nails, hang nails, dry cuticles
- § Extremely dry skin
- § Chronic heartburn
- § Poor digestion
- § Chronic lower back pain
- § Salt cravings
- § Unexplained moodiness, crying and guilt
- § Hypersensitivity to foods, odors or textures
- § Recurrence of yeast or fungal infections
- § Dark circles under the eyes
- § Increased susceptibility to bruising
- § Allergies

Adrenal Support (Glandular Supplement)

The whole body benefits from the balanced state of the adrenals.

Bovine adrenal substance is the most important ingredient in this formula. Derived from cattle raised in New Zealand with dense nutrients present.

Adrenal extracts are derived from the adrenal glands of bovine (beef) sources. They contain nutrients and substances that stimulate the rejuvenation and regrowth of similar tissue in people. This is a healing technique that dates back to early primitive times.

Licorice Root helps to reduce the amount of hydrocortisone broken down by the liver, thereby reducing the workload of the adrenal glands. Licorice was prescribed for Addison's disease until the 1930s. It supports and builds up the adrenals by prolonging the life of cortisol and aldosterone so they are not broken down so rapidly. It is an anti-stress herb known to increase energy, endurance and vitality. It can naturally fortify cortisone levels - the most important hormone in stress and adrenal fatigue. Licorice helps stabilize blood sugars, increase energy and improve stamina and endurance.

Schizandra Berries are an adaptogens. They provide antioxidant protection and prevent cellular breakdown. Schizandra inhibits the production of pituitary hormones that stimulate the adrenals, they lower the baseline stress level and allow the adrenals to rest. They also help harmonize organ function and increase energy and stamina.

B-Complex Vitamins and Vitamin C are an intricate part of this formula. Pantothenic acid (vitamin B5), known as the "anti-stress" vitamin, is often considered food for the adrenals as many adrenal hormones can't be made without it. Since exhausted adrenal glands produce low amounts of hormones, supplementing the diet with pantothenic acid often helps improve adrenal function and energy levels. The production of epinephrine and norepinephrine requires both Vitamin C and Vitamin B6.

Not only does vitamin C stimulate adrenal function, but the cells of the adrenal glands use vitamin C at a higher rate than any other cells in the body. Vitamin C needs are increased with all kinds of stress, both internal (emotional) and external (environmental). Smoking reduces vitamin C levels in the body, and so does alcohol, birth control pills, hormone replacement drugs for menopause, and aspirin. A research study by P. Samuel Campbell of the University of Alabama found that giving animals vitamin C essentially abolished their need to produce stress hormones. Those that did not receive the vitamin experienced three times the level of stress hormones in their blood.

Zinc and Magnesium are depleted by regular use of caffeine and are needed to produce hormones and enzymes in the body. Once the adrenals become overworked and stressed, the body's ability to retain magnesium drops down, as reflected in a greater loss of magnesium through urinary excretion. For this reason, people with exhausted adrenals will often require more magnesium to maintain inner balance. Magnesium is also needed by the adrenals as a basic building block for the manufacturing of hormones and as an antidepressant. Zinc activates the adrenal hormone receptor sites and polarizes glucose molecules. It plays a crucial role in cell growth and division where it is required for protein and DNA synthesis, in insulin activity, in the metabolism of the ovaries and testes, and in liver function. As a component of many enzymes, zinc is involved in the metabolism of proteins, carbohydrates, fats, and energy. optimally supports pathways that are involved in synthesis of different hormones. Other ingredients in this formula are potassium and borage oil powder. Low cell potassium reduces adrenal synthesis of cortisol, but not corticosterone. Borage acts as a restorative agent on the adrenal cortex. Borage acts as a tonic for adrenals.