ADRENAL INSUFFICIENCY

By Dr. Paul C. Eck and Dr. Lawrence Wilson

Adrenal insufficiency refers to the inability of the adrenal glands to produce a normal quantity of hormones. It may also be defined as a reduced ability to cope with stress. It is one of the most common imbalances in our population today.

Adrenal insufficiency is not to be confused with *Addison's disease*. Addison's disease is more or less a total adrenal gland shutdown. Adrenal insufficiency is also different from *adrenal burnout*. The latter is a more severe derangement of the energy-producing mechanisms of the body. In burnout, the body is basically unable to cope with stress. The symptoms of burnout are similar to those of adrenal insufficiency, but are more extreme and require longer to correct. Click here for a separate article on Adrenal Burnout.

ABOUT THE ADRENAL GLANDS

The adrenal glands are often referred to as the stress glands or the fight-or-flight glands. The fight-or-flight response is mediated by the adrenal medulla. The fight-or-flight response is the body's way of responding to stress.

The stress response prepares the body to run or fight. Blood pressure, pulse rate and blood sugar levels increase. Blood is shunted away from the digestive organs and toward the muscles and brain. The pupils dilate and the speed of reflexes increases. Part of the stress response is due to the action of the adrenal hormones. Symptoms of adrenal insufficiency can be directly traced to a reduced secretion of these hormones when under stress. Adrenal hormones are divided into two groups, those produced in the adrenal medulla and those produced in the cortex.

Hormones produced in the medulla are epinephrine and norepinephrine. These are powerful, fast-acting neurotransmitters which initiate the fight-flight response. They are also sometimes called adrenalin and noradrenalin. The hormones produced by the adrenal cortex are aldosterone, cortisol and cortisone. The cortical hormones have a slower, more prolonged action.

Aldosterone is called a mineralocorticoid hormone. Its primary

function is to increase sodium retention by the kidneys. Aldosterone levels roughly correlate with *sodium* levels on a hair mineral analysis. Aldosterone is a pro-inflammatory hormone required to initiate a healing reaction.

Cortisol** and **cortisone are referred to as glucocorticoid hormones because they cause conversion of amino acids and glycogen to glucose. The corticosteroids are anti-inflammatory and provide a mild sense of euphoria. Cortisol levels roughly correspond to the *potassium* level on a hair mineral analysis.

A balance between aldosterone and cortisol is necessary to maintain one's health. This balance is very roughly associated with the ratio of sodium to potassium on a hair analysis. If aldosterone secretion is high ratio-wise to cortisol, inflammatory conditions such as gastritis, colitis, arthritis, bursitis and sinusitis prevail. This often corresponds with a high ratio of sodium to potassium on a hair analysis.

If cortisol secretion is high ratio-wise to aldosterone, diseases such as diabetes, immune-deficiency syndromes, infection, arteriosclerosis, atherosclerosis, cataracts, glaucoma, coronary heart disease or cardiomyopathy may prevail. This corresponds to a low ratio of sodium to potassium on a hair analysis. Dr. Eck found the ideal sodium/potassium ratio is about 2.5:1 in an unwashed sample of head hair.

SYMPTOMS OF ADRENAL INSUFFICIENCY

Adrenal insufficiency is commonly associated with the following symptoms, which can vary from mild to extreme:

* fatigue
* decreased tolerance to cold
* poor circulation
* low blood sugar level (hypoglycemia)
* low blood pressure
* allergies
* apathy or depression
* low stamina
* low self-esteem due to low energy output
* joint aches and pains
* low levels of gastric hydrochloric acid

* tendency to constipation
* muscle weakness
* need for excessive amounts of sleep
* fears, due to low energy and secondary copper toxicity
* lowered resistance to infection
* subnormal body temperature

CAUSES OF ADRENAL INSUFFICIENCY

Causes of adrenal insufficiency may include:

- *Genetics.* Genetics can affect the adrenal glands. Also, genetic defects can be a cause of physical and emotional stress that can weaken the adrenals.
- *Congenital Weakness.* Congenital means present at birth. However, a congential condition may not be genetic. It may be caused by nutritional deficiencies of the mother that are passed on to the child. It may also be caused by toxic metals or other toxins passed on from the mother's body that interfere with the functioning of the adrenal glands. This is a very common cause of adrenal insufficiency today.
- *Nutritional Imbalances.* These can begin early in childhood with inadequate diets, diet inappropriate for one's oxidation type, poor food quality or digestive problems that prevent proper nutrition. Even natural foods today often are low in vital minerals and do not provide adequate nutrition. Pesticides, heavy metals, bacteria, solvents and other organic chemicals can all act as stressors that weaken the adrenal glands.
- *Emotional or Psychological Stress.* Responding to emotional stress over and over will eventually deplete the adrenal glands. A single overwhelming shock such as death of a loved one can also deplete the adrenals. Emotional stress can begin in childhood or at any time in life. It is actually the resistance or fear of a situation that causes the stress response. A loving response will cause much less of a reaction, no matter what the situation.

  Other possible stressors include pressures from family, school, work, social pressure, financial stress and others. People who force their bodies to "run or fight" all the time by any means will tend to exhaust their adrenal

glands. The 'fight-or-flight' response must be balanced by adequate rest and sleep.

- *Stimulants.* Most stimulants whip the adrenals. This may cause one to feel better for a while, but the long-term effect is to weaken the adrenal glands. Stimulants include sugar, alcohol, caffeine, theobromine in chocolate, amphetamines and other medical drugs, cocaine, heroine and others.

  Other stimulants can include loud noise, loud music, light stimulation such as strobe lights in night clubs, excessive exercise and excessive vibration. Anger, fear and worry can act as stimulants as well.

  Note that stimulant use can be a *result,* as well as a cause of adrenal insufficiency. A person who is tired due to weak adrenals may be attracted to stimulants such as drugs, loud music or anger to feel better temporarily.
- *Infections, Energetic and Structural Imbalances.* These are all internal stressors that, if left uncorrected, can eventually weaken the adrenals by forcing the body to mount a chronic stress response to these irritants.
- *Toxic Substances.* These may include chlorine in water, polluted air, mercury from dental fillings, household chemicals, food additives, pesticide exposure, dusts, molds and pollens. These often cause allergies that can be controlled with adrenalin or cortisone, the adrenal hormones.

  Medical therapy, particularly cortisone or prednisone therapy, weakens the adrenals by creating hormone imbalances.
- *Mental Attitude.* One's attitude makes a great difference in determining the stress response. Worry, fear, anger and resentment tend to increase the stress response. An attitude of gratitude and compassion for oneself and others tends to diminish the stress response. Understanding the impermanence of the body and the world we live in, emotional detachment and detachment from all form, and a single-minded desire to extend love can greatly diminish the stress response.

DETECTING ADRENAL INSUFFICIENCY

It is often possible to assess adrenal insufficiency based upon symptoms. Anyone who is tired, allergic, intolerant to cold, with symptoms of low blood sugar such as craving sweets or starches, or who is weak, or has low blood pressure most likely has some degree of adrenal insufficiency.

Blood tests. These are variable and are often absolutely normal. However, it is possible that the serum sodium level is less than 130 mEq/L

and a serum potassium greater than 5 mEq/L. A low glucose levels and elevated blood urea nitrogen (BUN) may also be present. Other factors, however, can affect the serum readings.

A blood test for adrenal function involves measuring 17-ketosteroids, a breakdown product of the adrenal hormones. Measuring the ketosteroids alone is not considered accurate. To perform the test properly, an injection of ACTH (adreno-cortical stimulating hormone) is given first. Then urine is collected and measured for 17-hydroxycorticosteroids (17-OHCS) and 17-ketogenic steroids (17-KGS).

Measurement of 17-OHCS and 17-KGS without the ACTH loading is not useful and may be misleading. The loading dose of ACTH measures how well the adrenals respond to the pituitary. Many people with adrenal insufficiency have no symptoms if the adrenals are not called upon to respond to a stressor.

Hair mineral analysis is an excellent assessment tool for adrenal insufficiency when the test is properly performed. It is often much more significant, reliable and sensitive than blood or most other tests provided the test is done correctly and one knows how to interpret it. The hair must not be washed at the laboratory. Washing the hair at the laboratory erratically removes sodium and potassium, critical minerals for adrenal assessment. According to the research of Dr. Paul Eck, the following are indicators of adrenal insufficiency on a hair analysis:

* Sodium level less than 25 mg%
* Potassium level less than 10 mg%
* Sodium/potassium ratio less than 2.5:1
* Sodium/magnesium ratio less than 4.17:1
* Calcium/potassium ratio greater than 10:1

The more of these indicators that are present, the greater the evidence of adrenal insufficiency. Also, the more extreme the values, the more suggestive of adrenal insufficiency problems.

CORRECTING ADRENAL INSUFFICIENCY

The only medical treatment for adrenal insufficiency is cortisone replacement therapy. While low dose cortisone is used by some physicians,

this therapy always causes serious side effects. In contrast, nutritional balancing science will correct most cases of adrenal insufficiency. It involves:

- Nutritional assessment through hair tissue mineral analysis.
- A wholesome diet of natural foods appropriate for one's oxidation type and digestive ability.
- Nutritional supplements to reduce stress and enhance adrenal activity. The adrenal glands especially require vitamins A, C, E, pantothenic acid, manganese and zinc. Adrenal glandular substance is also recommended to provide adrenal nucleoproteins and other specific nutritional factors to help rebuild the adrenal glands.
- Supplements to enhance overall metabolism, eliminate toxic metals and enhance absorption and digestion of food.
- Detoxification procedures such as sauna therapy to help eliminate toxic metals.
- Lifestyle modification to reduce harmful stressors.
- Techniques to improve one's ability to cope with stress. This can include biofeedback, meditation, relaxation techniques, etc.
- Attitude adjustment, including letting go of resentment, blame, attachments and fears that stimulate but also can paralyze the adrenal glands.

In mild cases of adrenal insufficiency, correction can occur in a matter of months. In more difficult or longstanding cases, complete correction may require several years. Persistence and patience are needed for optimal results.

Reference website: http://www.drlwilson.com/articles/adrenal_insufficiency.htm