ADRENAL INSUFFICIENCY

Taken from an article by Dr. Paul C. Eck and Dr. Lawrence Wilson

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SUMMARY

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. It can be corrected easily, in most cases, with a properly designed nutritional balancing program. This does not require fancy hormonal testing, hormone replacement therapy, or chelation therapy of any kind.

Definitions. Adrenal insufficiency occurs when the adrenal glands do not secrete adequate hormones, or do not respond correctly to the needs of the body.

Another term for this problem used by some doctors is adrenal fatigue.

This is not to be confused with Addison's disease. Addison's disease is more of a total adrenal gland shutdown.

Adrenal insufficiency is also different from adrenal burnout, sometimes also called adrenal exhaustion. The latter is a more severe derangement of the energy-producing mechanisms of the body.

In adrenal 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.

ADRENAL INSUFFICIENCY IS NOT A COMMON MEDICAL DIAGNOSIS

Conventional medical professionals rarely diagnose adrenal insufficiency, or, for that matter, adrenal exhaustion or adrenal burnout. This is very unfortunate, as the situation is so common. The official allopathic medical beliefs about the adrenal glands are false, in many cases, and include:

1. Either the adrenals work fine or they do not work at all - which is called Addison's disease. This is the prevailing viewpoint, but it makes no sense. Doctors are well aware, for example, that other glands such as the thyroid, pancreas, pituitary, ovaries, and testes can have many degrees of dysfunctions. Why should the same not be true of the adrenal glands?

2. If you are tired, depressed, or have low blood sugar, the best idea is to take anti-depressants, anti-anxiety drugs or other drugs. This is also ridiculous. The first course of action should be to assess and then heal your adrenal glands, in most cases.

3. Serum, urine or saliva adrenal hormone tests are adequate. Conventional medical and even naturopathic doctors often do not do these tests, in part because they are costly. This is probably a mistake, because they would find adrenal insufficiency if they performed these tests routinely. However, I also find that these tests are not good enough.

Instead, my experience is that a better, and much less costly test for adrenal activity is a properly performed and properly interpreted hair mineral analysis. The urine, salive and serum hormone tests are interesting, but do not give the same information as a correctly interpreted hair mineral analysis.

The mineral analysis not only tells a great deal about the status of the adrenal glands with mathematical precision, but it often tells us why the adrenals are not functioning properly. The test also tells a lot about the sympathetic nervous system, which is intimately connected to the adrenal glands and their functioning.

4. The medical answer for adrenal problems is usually a drug such as cortisone. This is unfortunate. Usually, I find, the answer is not any drug, but elimination of all the drugs one has taken for one's entire lifetime. In addition, one must remove many toxic metals, toxic chemicals, and renourish the entire body. Then the adrenals begin to function normally, and one's energy returns.

5. Doctors ignore simple physical tests they could do in their offices to assess the adrenal glands. These tests are discussed in detail below in the section entitled Detecting Adrenal Insufficiency.

As a result of the above flaws in current medical practice, most adrenal insufficiency is never identified. Instead, people receive false diagnoses of depression, bipolar disorder, attention deficit, narcolepsy, and other things. Their real problem is never addressed, and instead they are drugged, which only makes the real problem worse.

Some also self-medicate with caffeine, compulsive exercise, listening to loud music, too much sex, marijuana, heroine and other things. That is the situation today, where probably half or more of the population, including some children, have adrenal insufficiency.

ABOUT THE ADRENAL GLANDS

The adrenal glands are two almond-sized objects that sit atop the kidneys, near the middle of your back, one on each side. The gland is divided into two parts, the cortex and the medulla. Each produces different hormones that are absolutely essential for life.

The stress glands or the fight-or-flight glands. The fight-or-flight response is mediated by the adrenal medulla, a part of the adrenal glands. 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. Some are produced in the adrenal medulla, while the others are produced in the adrenal 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 include many such as aldosterone, cortisol andcortisone. The cortex also produces some sex hormones as well, particularly in women after menopause. 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 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 corticoste

oids are anti-inflammatory and provide a mild sense of euphoria.
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, chronic infections, malignancy, arteriosclerosis, atherosclerosis, cataracts, glaucoma, coronary heart disease or cardiomyopathy may eventually occur. 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.

· The use of 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.

· An imbalanced 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

Symptoms. It is sometimes 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 hormone activity 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

Only one indicator need be present for the pattern to be likely. 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.

Quantifying adrenal insufficiency and adrenal burnout. Each of the following criteria adds a multiple to the burnout pattern. For example, if two of the following indicators are present, I call it double burnout. The hair must not be washed at the laboratory for any of these criteria to be valid.

1. Slow oxidation

2. Very slow oxidation, with a calcium/potassium ratio greater than about 200 (ideal is about 4).

3. A calcium shell may overlap with very slow oxidation, but may be a separate burnout indicator.

4. A sodium/potassium ratio less than about 2. If the sodium/potassium ratio is very low, this adds more multiples (see A Low Sodium/potassium Ratio below for those criteria).

5. A sodium level less than about 11 mg%.

6. A potassium level less than about 5 mg%.

7. Three lows, also called three low macrominerals.

8. Four lows, also called four low macrominerals. This is a double burnout pattern.

9. Phosphorus less than 12 mg%. Phosphorus less than 10 may be a double burnout indicator.

11. Poor eliminator pattern, with at least three very low metal readings, is a burnout indicator. Six poor eliminator indicators is a double burnout indicator. The minerals to look for are copper, iron, manganese, lead, mercury, cadmium, arsenic, aluminum and nickel.

When more than one of these indicators are revealed, one refers to the situation as double burnout, triple burnout or perhaps quadruple or quintuple burnout.

Physical signs of adrenal insufficiency. Certain signs elicited during a physical examination can be helpful to help assess adrenal glandular activity. They include Rogoff's sign, the pupillary reflex, Sergeant's white line test, and Ragland's sign. All of these are rough indicators of adrenal glandular strength and adrenal reserve. They are not nearly as good as a hair mineral analysis, however, for assessing various aspects of adrenal weakness or insufficiency.

Rogoff's sign is tenderness in the mid to lower back area. It often indicates adrenal stress or adrenal fatigue.

The pupillary reflex test. Materials needed: a flashlight.

To do this test, one shines a flashlight into one of the patient's eyes. The light can be shined from the side so as cause minimum discomfort to the patient.

If the oxidation rate is fast (acute stage of stress), upon shining the flashlight, the pupil of the eye will constrict and remain constricted for at least 30 to 45 seconds.

If the oxidation rate is slow (exhaustion stage of stress), the pupil will constrict, but will then quickly dilate once again and remain dilated, or it may fluctuate between constricted and dilated.

A related sign seen upon physical examination is that some people have pupils that are always somewhat dilated. This is also a possible sign of adrenal weakness or fatigue.

Seargent's white line test. This was designed by Dr. Seargent many years ago to test the adrenal strength of tuberculosis patients. Those with stronger adrenal glands fared better with the disease.

Materials needed: a fork or similar object.

To do this test, one scratches the surface of the inner forearm on one side firmly but gently for about 6 inches with a fork or similar object. The scratched areas will turn white. If the lines turn red within 15-20 seconds, it indicates adequate adrenal activity. if the lines turn red sooner, it can indicate excessive adrenal activity or fast oxidation rate. If the lines stay white for 20-30 seconds or more, it can indicate sluggish adrenal activity or slow oxidation.

Ragland's sign. This is a test for posturally-related change in the blood pressure. The materials needed are a blood pressure cuff.

To do the test, one takes the blood pressure when the patient is sitting down. Then have the patient stand up and immediately check the blood pressure again. The systolic blood pressure should increase about 4-10 mm when the patient stands up, and this indicates

adequate adrenal activity. If, however, the second blood pressure is the same or lower or if the patient feels dizzy, it indicates sluggish adrenal activity and probable slow oxidation. It means the adrenal glands are not strong enough to control the blood pressure when the patient suddenly changes position.

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 quite easily. A complete nutritional balancing program involves:

1. Nutritional assessment through hair tissue mineral analysis. This is absolutely necessary because adrenal problems are not always simple. The adrenals can be exhausted, or over-stressed, or combinations of these two, and the diet and supplement recommendations must vary accordingly. The hair analysis laboratory must not wash the hair at the lab for accurate results, and the test must then be interpreted properly according to the method taught by Dr. Paul Eck.

2. A wholesome diet of natural foods appropriate for one's oxidation type and digestive ability.

3. Nutritional supplements based on the hair mineral analysis. Sometimes these are simple supplements to assist adrenal activity such as vitamins A, C, E, pantothenic acid, manganese, zinc and adrenal glandular. The glandular product provides specific adrenal nucleoproteins and other specific nutritional factors to help rebuild the adrenal glands.

However, depending on the test results, all of the above supplements and even some excellent natural foods such as good quality fats, may be harmful, at least until other mineral patterns are resolved first. This is extremely important.

4. Other supplements. These must also be based on the hair analysis. They may be needed to balance the oxidation rate, balance specific mineral ratios and patterns, help eliminate toxic metals, enhance absorption and digestion of food, replace deficient nutrients, inhibit the sympathetic nervous system, and for several other purposes as well.

5. Detoxification procedures. These include sauna therapy, foot reflexology, the spinal twist, the Roy Masters meditation, and coffee enemas. They are very useful to help eliminate toxic metals that always interfere with proper adrenal activity.

6. Lifestyle modifications. These are often needed to reduce harmful stressors, improve digestion and elimination, enhance one's rest and sleep, and improve the overall lifestyle.

7. Attitude adjustment. At times, one's adrenals will not heal unless one learns to forgive, let go of resentment and blame, and let go of attachments and fears. These can all stimulate the adrenals, but some emotional problems can also 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. To read more about this approach to correcting adrenal insufficiency, please read Adrenal Burnout Syndrome. Also read the articles on this website about nutritional balancing science.