

Description:

**Adrenal Fatigue** or Hypoadrenia can be treated. Those with adrenal fatigue can recover with proven and safe adrenal fatigue supplement. Adrenal fatigue occurs when poor nutrition, physical or emotional stress weaken and deplete the adrenal glands to the point that they no longer are able to provide balanced amounts of steroid hormones. The adrenal glands can deplete the body's hormonal and energy reserves, and may either shrink in size or hypertrophy (enlarge).

Adrenal Fatigue Syndrome is a collection of signs and symptoms that is the results of the adrenal glands inability to produce enough hormones to supply the body's demand. It should not be confused with Addison's Disease which is adrenal failure. Such condition can worsen if proper Adrenal Fatigue Treatment is not taken.

The overproduction of adrenal hormones caused by prolonged stress can weaken the immune system and inhibit the production of white blood cells that protect the body against foreign invaders (in particular lymphocytes and lymph node function). Adrenal dysfunction can disrupt the body's blood sugar metabolism, causing weakness, fatigue, and a feeling of being run down. It can also interfere with normal sleep rhythms and produce a wakeful, unrelaxing sleep state, making a person feel worn out even after a full night's sleep.

Many patients appear in their practitioner's office with symptoms of depression, anxiety, panic attacks and are placed on antidepressant or anti-anxiety medication when in reality they suffer from adrenal fatigue.

### **Normal Adrenal Gland Functions**

Your adrenal glands are two tiny pyramid-shaped pieces of tissue situated right above each kidney. Their job is to produce and release, when appropriate, certain regulatory hormones and chemical messengers.

The adrenal glands are controlled via the hypothalamus-pituitary-adrenal (HPA) axis. There is an existing negative feedback loop that governs the amount of adrenal hormones secreted under normal circumstances. The inner or medulla modulates the sympathetic nervous system through secretion and regulation of two hormones called epinephrine (adrenaline) and norepinephrine (noradrenaline) that are responsible for the fight or flight response.

The outer cortex manufactures the steroid hormones cortisone, hydrocortisone, testosterone, estrogen, 17-hydroxy-ketosteroids, DHEA and DHEA sulfate, cholesterol, pregnenolone, aldosterone, androstenedione, progesterone and a variety of intermediary hormones. The adrenals are the major steroid factories of the body.

In addition to helping you handle stress, these two primary adrenal hormones, adrenaline and cortisol, along with others similarly produced, help control body fluid balance, blood pressure, blood sugar, and other central metabolic functions.

### **Adrenaline**

Adrenaline (epinephrine) is the "fight-or-flight" stress hormone. Epinephrine is a neurotransmitter secreted by the adrenal gland that is associated with sympathetic nervous system activity. It prolongs and intensifies the following effects of the sympathetic nervous system.

- Causes the pupils of the eyes to dilate
- Increases the heart rate, force of contraction, and blood pressure
- Constricts the blood vessels of nonessential organs such as the skin
- Dilates blood vessels to increase blood flow to organs involved in exercise or fighting off danger, skeletal muscles, cardiac muscle, liver, and adipose tissue
- Increases the rate and depth of breathing and dilates the bronchioles to allow faster movement of air in and out of the lungs
- Raises blood sugar as the liver glycogen is converted to glucose
- Slows down or even stops processes that are not essential for meeting the stress situation, such as muscular movements of the gastrointestinal tract and digestive secretions

### **Cortisol**

Cortisone and hydrocortisone are the major "glucocorticoids." They help regulate the level of glucose in the body through a process known as "gluconeogenesis."

Cortisol, your long term stress hormone is made in the exterior portion of the gland, called the adrenal cortex. Cortisol, commonly called hydrocortisone, is the most abundant -- and one of the most important -- of many adrenal cortex hormones.

- Stimulates the liver to convert amino acids to glucose, the primary fuel for energy production.
- Stimulates increased glycogen in the liver. Glycogen is the stored form of glucose.
- Mobilizes and increases fatty acids in the blood (from fat cells) to be used as fuel for energy production.
- Counteracts inflammation and allergies.
- Prevents the loss of sodium in urine and thus helps maintain blood volume and blood pressure.
- Maintains resistance to stress (e.g., infections, physical trauma, temperature extremes, emotional trauma, etc.).
- Maintains mood and emotional stability.
- Excess Cortisol

### **Effects of elevated cortisol**

- Stimulates fat deposits and can result in weight gain.
- Increased fat accumulation around waist.
- Increases blood pressure.
- Increases protein breakdown that can lead to muscle loss.
- Causes demineralization of bone that can lead to osteoporosis.
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- Interferes with skin's ability to regenerate and heal.
- Cortisol is a powerful anti-inflammatory agent.
- Suppresses the immune system.
- Immune shutdown: yeast, viral, and bacterial infections.
- Poor memory: Brain (hippocampus) atrophy
- Estrogen dominance, leading to PMS, uterine fibroids, and breast cancer.
- Increases blood sugar, which leads to reduced insulin sensitivity and diabetes

### **Symptoms of elevated cortisol**

- Fatigue/ decreased energy
- Impaired memory
- Insomnia
- Anxiety
- Crying
- Impaired concentration
- Restlessness
- Feelings of Hopelessness

### **DHEA**

- Is a precursor for testosterone and estrogen.
- Reverses immune suppression caused by excess cortisol levels, thereby improving resistance against viruses, bacteria and Candida albicans, parasites, allergies, and cancer.
- Stimulates bone deposition and remodeling to prevent osteoporosis.
- Improves cardiovascular status by lowering total cholesterol and LDL levels, thereby lessening incidences of heart attack.
- Increases muscle mass. Decreases percentage of body fat.
- Involved in the thyroid gland's conversion of the less active T4 to the more active T3.
- Reverses many of the unfavorable effects of excess cortisol, creating subsequent improvement in energy/ vitality, sleep, premenstrual symptoms, and mental clarity.
- Accelerates recovery from any kind of acute stress (e.g., insufficient sleep, excessive exercise, mental strain, etc.).

## **Pregnenolone**

Leads to the production of progesterone and as one of the intermediary steps in the making of cortisol. Pregnenolone is therefore one of the most important intermediate hormones being produced in the hormonal cascade. Prolonged deficiencies in pregnenolone will lead to reduction of both glucocorticosteroids and mineralcorticoids such as cortisol and aldosterone respectively.

## **Causes Of Adrenal Fatigue**

Stress, Stress, and more Stress!

The most common causes of stress are work pressure, death of a love one, moving, changing jobs, physical illness and marital problems.

## **Other Adrenal Stressors:**

- Anger
- Fear
- Worry/anxiety
- Depression
- Guilt
- Overwork/ physical or mental strain
- Excessive exercise
- Sleep deprivation
- Light-cycle disruption
- Going to sleep late
- Surgery
- Trauma/injury
- Chronic inflammation
- Chronic infection
- Chronic pain
- Temperature extremes
- Toxic exposure
- Malabsorption
- Maldigestion
- Chronic illness
- Chronic-severe allergies
- Hypoglycemia
- Nutritional deficiencies

## **Stages of Adrenal Fatigue**

The famous researcher Hans Selye described the General Adaptation Syndrome (GAS) in 1936. It involves three stages. In the first stage, the alarm reaction, a new situation is met

with anxiety and surprise. A person intermittently secretes slightly higher levels of the adrenalin, the fight or flight hormone, in response to a slightly higher level of stress. The adrenal cortex is stimulated to produce additional cortisol and related hormones.

The second stage, called adaptation or resistance begins when the stress is constant enough, to cause sustained excessive levels of certain adrenal hormones. This is the body's response to long term protection. It secretes further hormones that increase blood sugar levels to sustain energy and raise blood pressure. The adrenal cortex (outer covering) produces hormones called corticosteroids for this resistance reaction.

The third phase is called exhaustion, wherein the body's ability to cope with the stress is now depleted. At this point, adrenal hormones drop from excessively high to excessively low and the body experiences adrenal exhaustion. Mental, physical and emotional resources suffer heavily. The body experiences "adrenal exhaustion". The blood sugar levels decrease as the adrenals become depleted, leading to decreased stress tolerance, progressive mental and physical exhaustion, illness and collapse.

Disruptions in the body's stress center--the hypothalamic-pituitary-adrenal (HPA) axis--act as crucial triggers in the initial onset and progression of depression. HPA under activity is linked to atypical depression fatigue, lethargy, indifference. Over activity of the body's stress system is associated with anxiety, panic attacks, insomnia, and loss of libido. A hyperactive Hypothalamic-Pituitary-Adrenal axis, results in significantly higher morning and midnight salivary cortisol levels which contributes to anxiety and mood symptoms by interfering with serotonin activity. This also leads to an impairment in the thyroid gland, which can cause a further decline in energy level and mood and is one of the reasons why many people have thyroid glands that don't work well.

### **Adrenal Fatigue Test**

In order to determine the health of your adrenal glands you need to have a blood, urine, or saliva test performed by a practitioner trained to treat adrenal fatigue. Most doctors are unfamiliar with this condition for the simple reason that it is difficult to diagnose effectively by traditional blood test. Conventional labs set the ranges to detect adrenal failure (Addison's Disease).

Cortisol levels may be checked throughout the day by a saliva test to determine if they are highest in the morning and lowest in the evening. Saliva testing is preferred as it measures the amount of free and circulating hormones instead of the binded hormone commonly measured in blood test. DHEA, Epinephrine, and norepinephrine are some other indicators of adrenal function. The information provided by testing can help to determine the most appropriate type of treatment.

### **Self Screening Tests for Adrenal Dysfunction**

Ragland's sign (blood pressure test) -- (Equipment required: Home blood pressure kit)  
Take your blood pressure while sitting down. Then, stand up and immediately take your

blood pressure again. Your systolic (first) number should have raised 8 to 10 mm. If it dropped, you probably have adrenal fatigue.

Pupil dilation exam -- (Equipment required: Flashlight and a mirror) Look into the mirror and shine the flashlight into the pupil of one eye. It should contract. If after 30 seconds, it stays the same or, even worse, dilates, you most likely have adrenal fatigue.

Pain when pressing on adrenal glands (located over kidneys)

### **Adrenal Fatigue Symptoms**

- Low body temperature
- Weakness
- Unexplained hair loss
- Nervousness
- Difficulty building muscle
- Irritability
- Mental depression
- Difficulty gaining weight
- Apprehension
- Hypoglycemia
- Inability to concentrate
- Excessive hunger
- Tendency towards inflammation
- Moments of confusion
- Indigestion
- Feelings of frustration
- Poor memory
- Alternating diarrhea and constipation
- Osteoporosis
- Lack of energy
- Auto-immune diseases
- Lightheadedness
- Palpitations [heart fluttering
- Dizziness that occurs upon standing
- Poor resistance to infections
- Low blood pressure
- Insomnia
- Food and/or inhalant allergies
- PMS
- Craving for sweets
- Dry and thin skin
- Headaches
- Scanty perspiration
- Alcohol intolerance

## **Treatment for Adrenal Fatigue**

Adrenal Fatigue treatment requires diet and lifestyle changes. It may take 6 months to 2 years for the adrenal fatigue to resolve.

### **Adrenal Fatigue Supplements**

Supplements for adrenal fatigue play an important role in nourishing and strengthening your adrenal gland. They will allow the adrenal gland to be restored to a more healthy level of functioning which could not occur without them. It can consist of herbs, vitamins, minerals, and essential fatty acids. We have listed the adrenal supplements individually but we carry many excellent adrenal supplements with most of the ingredients combined in one capsule.

\*\*Because of the similarities in low and high cortisol symptoms it is highly advisable to obtain a saliva cortisol test before beginning any treatment plan. If you are suffering from excessive amounts of cortisol and take adrenal cortical extracts or other supplements to raise an already elevated cortisol level your symptoms will become worse.

### **Adrenal glandulars, or Adrenal Cortical Extracts**

This is desiccated adrenal gland. It is extremely important in the initial phases of adrenal repair since it provides raw materials to support adrenal function. It also contains some important adrenal hormones.

### **B-Complex**

Contains Vitamin B6, niacin and other B vitamins needed as co-factors in enzymatic pathways and to restore proper adrenal functioning.

### **Cortisol replacement**

Isocort is designed to provide adrenal support for those who have adrenal fatigue or reduced cortisol levels. Isocort provides relief from reduced cortisol production which can result in many symptoms including, fatigue, and difficulty getting up in the morning, food cravings, allergies, anxiety, and lack of energy. Isocort provides a standardized dose of the adreno-cortical substance (Cortisol) to supplement adrenal function.

### **Cordyceps:**

This is a Chinese mushroom used for supporting the adrenal gland. The typical dose is one to two tablets three times daily.

### **DHEA**

Aging and diseases associated with aging can cause a decline in critical hormones produced by the adrenal glands. Pregnenolone is converted into crucial antiaging hormones such as dehydroepiandrosterone (DHEA), estrogen, progesterone, and testosterone. DHEA supplementation may help to partly rectify hormone imbalances caused by age-induced adrenal insufficiency.

**7-Keto DHEA:** This form does not convert to sex hormones but will still give support to adrenal functions. It also is thermogenic aiding in fat burning.

**Essential fatty acids:** The reason they are called essential is that our body needs them for good health but cannot manufacture them. They aid in the healing process, increase energy, and are anti inflammatory.

#### **L-Theanine**

L-theanine is an amino acid found in green tea that produces a calming effect in the brain. It works by increasing gamma-aminobutyric acid (GABA) that is a relaxer and creates a sense of well-being. L-theanine may be taken to help modulate mood and relieve stress in many health conditions (Abe et al. 1995; Kobayashi et al. 1998; Juneja et al. 1999).

#### **Licorice**

Licorice (*Glycyrrhiza*) works by blocking the breakdown of hydrocortisone in the liver. the hydrocortisone level then becomes higher, and this slows down the production of ACTH (adrenocorticotrophic hormone) from the pituitary gland, giving the adrenals a much-needed rest. Licorice is a highly prized medicinal in Chinese medicine. *Glycyrrhiza* may be taken in a variety of ways, including as a tea. Licorice can be tapered off when adrenal gland function is restored.

#### **Magnesium (Citrate)**

Important for cellular energy (ATP) production. It is essential for enzyme production in the adrenal cascade.

#### **Pantothenic Acid**

Pantothenic acid (vitamin B5) activates the adrenal glands. It is a precursor of acetyl CoA (a part of the Krebs's cycle which produces cellular energy) and acetylcholine (a primary neurotransmitter). Pantothenic acid deficiency results in adrenal insufficiency, which is characterized by fatigue, headache, sleep disturbances, nausea, and abdominal discomfort (Tarasov et al. 1985; Smith et al. 1996; Murray et al. 1997).

#### **Pregnenolone**

Pregnenolone is a precursor to many of the hormones produced by the adrenal glands. It is a raw material that supports basic adrenal function. Pregnenolone is best taken towards the evening but may be taken earlier if it interferes with sleep. The usual dose is 25 mg.

#### **Rhodiola rosea**

A natural herb that has been found to decrease the effects of stress and fatigue on mental performance. These effects have been attributed to the ability of *Rhodiola* to influence the levels and activity of monoamine neurotransmitters.

#### **Siberian Ginseng**

Supports and rejuvenates adrenal functioning, regulates neurotransmitters, normalizes metabolism. It counteracts mental fatigue, increases energy and endurance.



**Trace Minerals** (zinc, manganese, selenium, chromium, molybdenum, copper, iodine)

**Vitamin C**

Helps support adrenal functions and is best taken with bioflavonoids to be fully utilized by the body. Vitamin C is essential for the production of adrenal steroid hormones, increases overall adrenal function and stimulates the immune system.

**Vitamin E with mixed tocopherols** 400 IU daily

**Lifestyle changes such as:**

**Reduce Stress.** Family, job, financial, and marital stress are factors that must be reduced or eliminated when possible. Sometimes seeing a mental health counselor to develop coping skills to deal with life's stressors can be helpful.

Eat steadily, all day long. Skipping meals is one of the worst things you can do for your body. When you're hungry, your blood sugar drops, stressing your adrenal glands and triggering your sympathetic nervous system. That causes light-headedness, cravings, anxiety and fatigue.

Skipping breakfast is particularly bad, as it is a sure fire way to gain, not lose, weight. If you start each morning with a good breakfast and "graze" healthfully every two to four hours, your blood sugar won't take any sharp dips. You'll feel more rested and energetic. Another drawback to skipping meals: The resulting low blood sugar can slow the speed at which you process

Exercise to relax. Walking, YOGA, deep breathing, and stretching are great stress reducers. Vigorous or aerobic exercise can deplete the adrenals. If your symptoms are severe wait until you feel a little stronger to do these.

Get 8 hours sleep or more. During sleep your adrenal glands are restored and repaired. Unfortunately, most of us place little value on sleep, and end up getting less than we need, night after night. Result: Your adrenal glands stay depleted.

**Foods to Avoid in Adrenal Fatigue**

- Eat protein with every meal. Eat Complex carbohydrates such as brown rice. Avoid sugar, junk food, white pasta, white rice, white bread.
- Alcoholic beverages in excess reduce the functioning of the immune and energy production systems
- Artificial sweeteners (Stevia is okay)  
Foods high in potassium make adrenal fatigue worse (bananas, all melons, dried figs, raisins, dates, oranges, grapefruit, etc.)

- Chemicals, additives and preservatives such as sodium nitrate, MSG  
Oysters, clams, lobster, deep-sea fish such as tuna, mackerel, and swordfish that may contain toxic levels of mercury.
- Absolutely NO Caffeine
- Coffee/Sodas over stimulates your adrenals. They deplete important B vitamins and alter your pH levels. Coffee does not give you energy; coffee gives you the illusion of energy. Coffee actually drains the body of energy and makes you more tired, because of vitamin and adrenal depletion.
- Sweetened fruit juices

**The following have been shown to relieve Adrenal Fatigue symptoms:**

- Sleeping until 9 a.m. as often as possible
- Laughing
- Exercising
- Minimizing stress
- Taking negative people out of your life
- Eating regular meals
- Chewing well
- Doing something fun each day
- Combining unrefined carbohydrates with protein and oils
- Avoiding junk food, white potatoes, white bread, white flour, white rice, and refined sugar
- Eating five to six servings of vegetables each day
- Taking calcium and magnesium supplements
- Adding sea salt to your diet (May add ½ tsp sea salt to 8 oz water in the morning)