

ADRENAL FATIGUE: The Cause, The Cure, & The Hope

WHAT IS ADRENAL FATIGUE?

Fatigue and lethargy is one of the most common complaints amongst adult patients. **If you have symptoms such as tiredness, fearfulness, allergies, frequent influenza, arthritis, anxiety, depression, reduced memory and difficulties in concentrating, insomnia, worn-out, inability to lose weight after extensive efforts, you may be suffering from adrenal fatigue (technically known as hypoadrenia).**

Adrenal fatigue has a broad spectrum of non-specific yet often debilitating symptoms. The onset of this condition is often slow and insidious. Patients are told that they are stressed and need to learn to relax more. Yes, we all know that "stress kills" to a large extent. But, the question is how? And, what are the solutions?

The real truth is that **stress and adrenal fatigue is not a mysterious entity at all.** Our body has a built-in mechanism to deal with it. Being able to handle stress is a key to survival, and the control center in our bodies is the adrenal glands. **When our adrenal glands become fatigued and unable to handle stress, dysfunctional physiological responses set in.**



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WHAT ARE THE SIGNS AND SYMPTOMS OF ADRENAL FATIGUE?

- **Tendency to gain weight and unable to lose it**, especially around the waist.
- **High frequency of getting the flu** and other respiratory diseases and these symptoms tend to last longer than usual.
- **Tendency to tremble when under pressure.**
- **Reduced sex drive.**
- **Lightheaded when rising from a laying down position.**
- **Unable to remember things.**
- **Lack of energy in the mornings** and also in the afternoon between 3 to 5 pm.
- **Feeling better suddenly for a brief period after a meal.**
- Often feel tired between 9 - 10 pm, but resist going to bed.
- **Need coffee or stimulants to get going in the morning.**
- **Crave salty, fatty, and high protein foods such as meat and cheese.**
- **Increased symptoms of PMS for women**; periods are heavy and then stop, or almost stop on the 4th day, only to start flowing again on the 5th or 6th day.
- **Pain in the upper back or neck with no apparent reasons.**
- **Feels better when stress is relieved**, such as on a vacation.
- **Difficulties getting up in the morning**
- **Lightheaded**

Other signs and symptoms include:

- Mild depression
- Food and or inhalant allergies
- Lethargy and lack of energy
- Increased effort to perform daily tasks
- Decreased ability to handle stress
- Dry and thin skin
- Hypoglycemia
- Low Body Temperature
- Nervousness /Palpitations
- Unexplained hair loss
- Alternating constipation and diarrhea



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WHAT ARE THE CAUSES OF ADRENAL FATIGUE?

Chronic stress is very common in the western society. The most common causes of stress are work pressure, death of a loved one, moving houses, changing jobs, illness, and marital disruptions. Adrenal fatigue occurs when the amount of stress overextends the capacity of the body to compensate and recover from stress.

Stressors that can lead to adrenal fatigue include:

- Anger
- Chronic fatigue
- Chronic illness
- Chronic infection
- Chronic pain
- Depression
- Excessive exercise
- Fear and guilt
- Gluten intolerance
- Low blood sugar
- Mal-absorption
- Mal-digestion
- Toxic exposure
- Severe or chronic stress
- Surgery
- Late hours
- Sleep deprivation
- Excessive sugar in diet
- Excessive caffeine intake

One of the most commonly overlooked causes of adrenal fatigue is chronic or severe infection that gives rise to an inflammatory response. Such infection can occur sub-clinically with no obvious signs at all. Parasitic and bacterial infections including Giardia and H. pylori are often the main culprits.



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HOW DO STRESSORS AFFECT THE BODY?

When a person is stressed, the body reacts by mounting a stress response through the stimulation of the sympathetic nervous system. This is also called the "fight or flight" response as the body arms itself to face what it perceives as danger. When this happens, epinephrine is secreted from the adrenal medulla, and the hypothalamus-pituitary axis is stimulated to release ACTH, which in turn causes the adrenal cortex to increase production of the anti-stress hormone cortisol.

When a person experiences chronic stress, the cortisol level may rise to such a high level that its production reduces as the adrenals become exhausted. At the same time, DHEA, a hormone normally produced in the adrenal glands, will start to decrease with stress without hitting a peak first (as in the case of cortisol). With chronic stress, there is decompensation of DHEA with concurrent rise of cortisol. As a result, the ratio of cortisol to DHEA increases.

As with most hormonal systems, there is a negative feedback system in the body to limit the production of each hormone. The same occurs in the case of cortisol, with one exception. **During prolonged or acute stress when the body perceives that its survival is at stake, the excessive cortisol output actually blunts the negative feedback response. In other words, instead of a negative feedback system to shut down cortisol production when the total cortisol is high, the body reacts in the opposite way. As cortisol is the anti-stress hormone, the body will interpret a very high cortisol level and impending danger. When this happens, the high cortisol exerts a dampening effect on the negative feedback system instead in order that we can survive this threat. More cortisol will therefore be produced.** This is the body's way to ensure that we can cope with the on-going stress that threatens its survival.

When our body is stressed, our cortisol level rises in an environment where the negative feedback system is dampened. While this is happening, our DHEA level continues to drop. The result is a **high cortisol to DHEA ratio and:**

1. Reduced insulin sensitivity, reduced glucose utilization and **increased blood sugar, which lead to diabetes.**
2. Reduced secretory IgA (the main cellular defense factor), natural killer (NK) cells and T-lymphocyte activity. This leads to **increased chances of getting infections such as Herpes, yeast overgrowth, and viral infections.**
3. Increased loss in bone mass as calcium absorption is blocked and demineralization of bone occurs, thus leading to **osteoporosis.**
4. Increased fat accumulation around the waist and protein breakdown, thus leading to **muscle wasting and inability to reduce weight.**
5. Increased water and salt retention, leading to **high blood pressure.**
6. **Estrogen dominance**, leading to PMS, uterine fibroids, and breast cancer.



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WHY IS ADRENAL FATIGUE DIFFICULT TO DIAGNOSE?

Despite sub-clinical hypoadrenia with its various stages being recognized as a distinct clinical syndrome since the turn of the 20th century, most doctors are unfamiliar with this condition for the simple reason that it is **difficult to diagnose effectively by traditional blood test**. Normal blood tests are designed to detect severe absolute deficiency of adrenal hormones known as Addison's disease. This disease afflicts only 4 out of 100,000 and is often the result of an auto-immune disease or infectious origin. Blood tests are also useful to detect extreme excessive levels of adrenal hormones in a condition known as Cushing's disease.

Adrenal hormones are low in the case of adrenal fatigue, but still within the "normal" range and not low enough to warrant the diagnosis of Addison's disease by regular blood tests. In fact, your adrenal hormones can be half of the optimum level and still be labeled "normal". **Such "normal" level of adrenal hormones does not mean that the patient is free from adrenal fatigue.** Conventional doctors are not taught the significance of sub-clinical adrenal fatigue. They are misguided by blood tests which are not sensitive enough to detect sub-clinical adrenia. **As a results, patients tested for adrenal functions are told they are "normal" but in reality, their adrenal glands are performing sub-optimally,** with clear signs and symptoms as the body cries out for help and attention.

Adrenal fatigue afflicts more people than Addison's disease. It is not recognized and has become an epidemic of massive proportion. **To truly diagnose adrenal fatigue, more sensitive laboratory testing and meticulous detail to a complete history is required.**

Adrenal fatigue has been demonstrated in laboratory studies of surrogate markers of adrenal function. Two such markers used are **cortisol and DHEA.**

DHEA can be measured anytime during the day. Cortisol, on the other hand, is the highest in the morning and lowest in the evening before bedtime.



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WOMEN AND ADRENALS:

Ovarian Adrenal Thyroid (OAT) Axis Imbalance. There are very strong interlinked relationships between the ovarian, adrenal, and thyroid systems in the women. These three organs are intimately co-dependent on each other for optimal function. This axis, also called the **Ovarian Adrenal and Thyroid axis (OAT), must be balanced if a woman wants to feel good. When medication alters one of the organ's functions, it will invariably lead to an often unrecognized change in the other two organs.** For example, if thyroid medication is administered, it is not uncommon to see concurrent menstrual irregularities, a function of ovarian hormones, and reduced ability to deal with stress, a function of the adrenals.

Let us look more closely at the reason. **In adrenal fatigue, internal cortisol often creates a condition of multiple organ resistance, including the thyroid and ovaries.** Thyroid tissues fail to respond as efficiently to the hormonal signal. **Adrenal fatigue is often accompanied by clinical or sub-clinical hypothyroidism.** Laboratory values can be normal but classical signs of hypothyroidism may be present. Physicians and patients alike are often confused. Anti-depressants are often prescribed as a solution. However, this seldom works but will instead often make the condition worse.

A cortisol induced organ resistance applies to nearly all other hormone regulated organs including the ovaries and the pancreas. **Few hormones are allowed to work at optimal levels in the presence of adrenal fatigue.** A multitude of hormones including insulin, progesterone, estrogen, and testosterone become affected. The normal negative feedback loop in place can be disrupted. The ability of each hormone to regulate and fine tune its target organ to achieve homeostasis is often compromised. **Blood pressure can become erratic, blood sugar levels may experience wide swings, bipolar and anxiety states come at will, and menstrual flow can become irregular.** Even the brain may become less sensitive to estrogen.

Let us look more closely at how the ovarian system is affected in particular. Today, women often have exhausted adrenal glands by the time they reach their mid-thirties or early forties due to a stressful lifestyle. Stress is primarily regulated by our adrenal glands. In early stages of adrenal fatigue, cortisol output is high as the body attempts to neutralize the stress by producing more of it. However, when too much cortisol is produced, it will have multiple undesirable effects. For example, cortisol blocks progesterone receptors, making them less responsive to progesterone. Progesterone normally produced by the adrenals comes to a halt in favor of cortisol. Insufficient progesterone production leads to an imbalance of estrogen to progesterone. With reduced progesterone to offset estrogen, the body may experience a host of undesirable side effects associated with excessive estrogen. **This leads to a condition known as estrogen dominance. It is no coincidence that we see a proliferation of conditions associated with excessive estrogen such as PMS, fibroids, and pre-menopausal syndrome when women reach their mid thirties and early forties.**



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WOMEN AND ADRENALS (cont'd)

It is interesting to note that most post- menopausal women who are experiencing hair loss have an adrenal function problem. Hair loss is a sign of excessive androgen. Some women tend to produce too much androstenedione, which then gets converted into estrone and testosterone. Estriol can be given to offset the testosterone effects as estrogen balances testosterone in the body. Cortisol can be considered when closely supervised and used for a short period of time. It keeps the adrenal glands from getting stuck in the androgen part of the stress cycle. Cortisol also complements the use of progesterone as well. The effective cocktail therefore consists of estriol, cortisol and progesterone.

Any serious attempt to normalize this axis should consider adrenal recovery as the first step. Adrenal normalization should precede hormone modulation. The adrenal glands deal with the daily stresses of life. A woman must normalize her adrenal glands in order to have a total body hormonal balance. In fact, replacement of deficient hormones alone without addressing the overall health of the adrenal gland is a band-aid approach and is often ineffective in the long run. The normalization process can begin with investigating and eliminating stressors. Stressors are often chronic in nature, and can be related to lifestyle, dietary, mental, and inflammatory causes. **Women with heavy menstrual bleeding and adrenal exhaustion can normalize their adrenal functions with natural compounds to boost internal cortisol production**, adequate sleep, proper diet, and nutritional supplementation before considering progesterone therapy. **Exogenous cortisol replacement should only be considered as a last resort due to its long term negative effects.**

Often times, the use of anti-depressants, thyroid replacements, and ovarian hormones often make women with OAT axis imbalance worse. Estrogen replacement often becomes ineffective, and symptoms of estrogen dominance like hot flashes, weight gain at the hips, water retention, and moodiness are commonly observed despite normal estrogen levels. Patients become frustrated as it seems that nothing can help when a downward spiral of multiple symptoms commonly surface: depression, insomnia, fatigue, metabolic and hormonal imbalances. Failing conventional therapy, many turn to natural compounds. It is not unusual to see many people take a full battery of these nutrients. For example, Vitamin C, DHEA, pregnenolone, natural progesterone, and natural thyroid replacement, just to name a few. In the beginning, this might be helpful. **Unfortunately, a short-gun approach by taking many nutrients seldom works and might even backfire. The higher the dose the worse the patient can become.** That is why chronic stress and adrenal fatigue can make one feel so rotten, like a slow-motion train wreck in progress. In severe cases, the patient often feels like the "walking dead" caught in a vicious downward cycle of deteriorating physical and emotional functions.



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HOW IS ADRENAL FATIGUE TREATED?

So after years of suffering and wondering if there really is anything wrong with you, the diagnosis of adrenal fatigue has been made. So now what??? Treatment for adrenal fatigue requires ***PATIENCE, PATIENCE, PATIENCE, PATIENCE***. It took years for your body to get to this state, and so it will not revert that quickly. I know you are anxious, but half of the battle was figuring out what was causing your symptoms. Stay diligent, stay patient, stay hopeful and stay positive and this will put you on the road to recovery.

1. Removal of the stressors. This is the most important step. Emotional stressors such as marital, family, relationship, or financial problems needs to be dealt with and normalized.

2. Sleep. The most important is to have enough rest. It is important to go to sleep by 10 p.m. every night. Why? This is because our adrenal glands kick in for a "second wind" to keep us going from 11 pm to 1 am. This puts tremendous stress on the adrenals. When we rest early, our adrenals are fully rested and the high gear is avoided. **Between 10 p.m. and 1 a.m., our adrenals work the hardest to repair the body.** We should also try to sleep in until 8:30 a.m. or 9:00 a.m. if possible. This is because our cortisol level rises to its peak from 6:00 a.m. to 8:00 a.m. in order to wake us up and get us going for the day.

In later stage adrenal fatigue, the level of cortisol falls and we feel tired. It will be more difficult to wake up. If we were to wake up too early, this will only increase stress on the adrenal glands, which will have to produce more cortisol when it is already exhausted.

A good night sleep is therefore mandatory. Without a good sleep, our bodies cannot regenerate itself to deal with stressors the next day. We should also rest in a completely dark room to maximize melatonin production.

3. Avoid Coffee or Caffeinated Beverages. Coffee and tea act as stimulants and interrupt sleep pattern. Herbal tea is acceptable because it does not contain caffeine.

4. Avoid TV and Computers. Some people may be photosensitive. Watching television or working at the computer may prevent the melatonin level from rising to induce sleep. If you are one of these people, you should turn off your television or computer by around 8 p.m.



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HOW IS ADRENAL FATIGUE TREATED? (cont'd)

5. Exercise. This is a wonderful stress reducer and a tremendous oxygenator. Exercise reduces depression, increases blood flow, normalizes level of cortisol, insulin, blood glucose, growth hormones, thyroid, and makes you feel generally much better. The key is to adjust the level of exercise in accordance to your capacity. The more advanced your adrenal fatigue, the less you should exercise vigorously. Vigorous exercise can lead to a catabolic state and worse adrenal fatigue.

Simple exercises such as brisk walking, or climbing stairs are easy to do and can be done almost anywhere. You should vary your routine so that exercise becomes fun. When exercising, you should exercise to no more than 50% of your capacity and feel fresh after each exercise session. You should cover the following three categories:

- Aerobics - such as fast walking, stairs climbing, Nordic track, swimming, and treadmill.
- Anaerobic - such as weight lifting, push-ups, sit-ups, chin-ups
- Flexibility - such as stretching, yoga, and tai chi

6. Eating Pattern. When our cortisol levels are at its peak from 6 a.m. to 8 a.m., we may have no appetite. Many people skip breakfast because "they are not hungry". This is because our bodies need sugar to run on. Furthermore, our body's energy requirement does not change during this period. Even a small snack is better than nothing at all and will provide the needed energy even though there is no urge to eat.

Skipping breakfast is not a good idea. If you are low on sugar, the adrenals are instructed to secrete cortisol because cortisol activates gluconeogenesis to increase blood sugar level and allow the body to function. It is therefore important to have a healthy breakfast soon after waking and not later than 10 a.m. This will prevent the body being put in a position to play "catch-up" for the rest of the day.

The best time for lunch is from 11:00 a.m. to 11:30 a.m. Sometimes, a nutritious snack between 2:00 to 3:00 p.m. will be needed to sustain our bodies through the dip in cortisol levels that occurs between 3:00 to 4:00 p.m. **Evening meals should be around 5:00 to 6:00 p.m.** Supper, if needed, should be in small quantities and low in high glycemic foods to avoid the steep rise in blood sugar commonly seen in high-glycemic index snacks such as cakes. These snacks will cause the blood sugar to rise and a corresponding increase in insulin output.

Over time, insulin secretion becomes dysfunctional, resulting in a hypoglycemic state in the middle of the night. These symptoms are characterized by nightmares, anxiety, and night sweats. When this occurs, the body will have to activate the adrenals to put out more cortisol in order to raise the blood sugar back to its normal level. This will eventually put an excessive burden onto the already fatigued adrenal gland if carried on year after year.



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HOW IS ADRENAL FATIGUE TREATED? (cont'd)

7. Diet (Please refer to Dr.Wilson's guide for nutritional eating)

A poor or unfitting diet is one of the key and leading causes of adrenal fatigue. Without a diet that is bio-chemically and metabolically compatible with the needs of a damaged adrenal gland, complete recovery is simply not possible

8. Nutritional Supplements (Please refer to Dr.Wilson's guide for all of the nutritional supplements)

Making lifestyle changes will make a larger impact on recovery than you might think. Along with a healthy lifestyle, I encourage Adrenal supplements. Below are the descriptions of Adrenal Supplements that can aid and enhance your recovery.

ADRENAL REBUILDER

Combines the complete range of hormone-free glandular extracts needed by your body to rebuild Adrenal gland tissue and restore proper function, while supporting the other endocrine glands adversely affected by stress.

Ingredients - A proprietary blend containing Adrenal, gonad, hypothalamus, and pituitary concentrates from porcine sources; and calcium glycerophosphate. Contains no hormones.

Contains **no** hormones.

ADRENAL C FORMULA

Adrenal C Formula contains the specific trace minerals your Adrenal glands need to fully utilize vitamin C, recover from stress and produce Adrenal hormones. In addition, it provides bioflavonoids in the optimum ratio of 2:1 to ascorbic acid to double the effectiveness of the ascorbic acid and make the vitamin C complex complete. The bioflavonoids not only enhance vitamin C activity but also support tissue healing. Adrenal C Formula delivers sustained release of these nutrients at a slow steady rate so they can be evenly absorbed and utilized by the body as needed.

Ingredients - A proprietary blend of vitamin C (as mineral ascorbate), magnesium ascorbate, zinc ascorbate, manganese ascorbate, copper (Kreb's cycle undiluted) and citrus bioflavonoids. Contains no animal products.

Contains no animal products.

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SUPER ADRENAL STRESS FORMULA

Super Adrenal Formula 1 provides the exact nutrients in the form and proportion they are needed by your Adrenal glands to withstand and properly recover from stress and to help normalize hormone production.

Ingredients - A proprietary blend of vitamin A (as solubilized palmitate), vitamin C (as mineral ascorbates), vitamin E (mixed tocopherols), vitamin B1 (as thiamine HCL), vitamin B2 (as riboflavin HCL & Riboflavin 5' phosphate), vitamin B3 (as inositol hexaniacinate), vitamin B5 (as d-calcium pantothenate), vitamin B6 (as pyridoxine HCL & pyridoxal 5' phosphate), biotin, folic acid, magnesium (as ascorbate & citrate), manganese ascorbate, zinc ascorbate, chromium (as picolinate), copper (Kreb's cycle undiluted), selenium (as selenomethionine), citrus bioflavonoids, L-5 hydroxytryptophan (5-HTP), choline bitartrate, kelp, potassium para-aminobenzoic acid (PABA).

Contains no animal products.*

HERBAL ADRENAL SUPPORT FORMULA

This combination of organically grown herbs formulated in the proportions needed to normalize Adrenal hormone output has proven to be very effective for those suffering from mild and moderate Adrenal Fatigue. If you have trouble sleeping and you have Adrenal Fatigue or are under stress, it may be because your levels of the Adrenal hormone, cortisol, are too high or too low during the night. This can interrupt your normal sleep pattern. Herbal Adrenal Support Formula helps normalize cortisol output.

Herbal Adrenal Support Formula is a safe, effective product based on scientific research. Each herb in this formula has been shown to nourish and help replenish the Adrenal glands without over-stimulating them. If you have been, or are under stress, Herbal Adrenal Support Formula will help minimize its distressing effects on your body so you can bounce back more easily.

Ingredients - A proprietary liquid formula containing the following herbs: organic maca (root), organic licorice (root), organic ashwagandha (root), and organic Siberian ginseng (root). Because this is an herbal tincture, this formula is in a base of 25% ethanol.

Contains no hormones or animal products*

***** All of these supplements are available from ***DR. RAMAN OR SPECIALTY PHARMACY-314-392-9900***. Consult your physician before beginning any type of supplements.

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SUGGESTED READINGS:

Adrenal Fatigue: The 21st Century Stress Syndrome by Dr. James Wilson

www.adrenalfatigue.org

WORDS FROM DR. RAMAN:

I know the pain and frustration each of you are feeling. I have been there myself. It was only during my low points that I was able to rise and educate myself and teach myself what medical school couldn't. I hope this handout empowers you to be an advocate to your own health. I hope the voice of your need for help is heard and your suffering soon becomes a shadow behind you. Adrenal fatigue has no voice of its own and I hope each of you will pass on to each other the knowledge and we can get the conversation started. Good Health is attainable –BUT only with PATIENCE, OPTIMISM AND HOPE!! My best wishes and thoughts to all of you.



GO FROM FEELING LIKE THIS TO.....THIS!

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