ADRENAL FATIGUE

You have two adrenals, one located at the top of each kidney. They are part of the endocrine system, therefore are subject to emotions and stress. Their responsibility is to regulate stress response by producing cortisol and adrenaline. These hormones are water soluble, derived from the amino acid tyrosine, part of the fight or flight response as dictated by the sympathetic nervous system. The adrenals release secretions directly into the blood (fast acting), and are also the main source of dopamine.

SYMPTOMS

Adrenal disease may often go unnoticed until far advanced. Symptoms may appear vague and include:

Fatigue
Loss of energy
Decreased immune system with recurrent illness
Nausea/vomiting
Diarrhea
Decreased tolerance to cold
Loss of appetite
Weight loss
Increased pigmentation of skin
Muscle weakness
Hair loss (women)
Dizziness when standing up quickly
Slow starter in a.m.
Tired between 3-4 pm
Feels better after evening meal or 6pm
Becomes irritated easily
Poor sex drive
Difficulty doing tasks
Can't handle stress
Still tired after sleep
Craves salt or salty foods
PMS worse
Worse if skip meal
Memory less accurate
Thoughts fuzzy
Mild depression
Recurring illnesses (colds, respiratory infections)
Craves salty
Hypoglycemia
Low blood pressure
Feel like a light switch goes off and you have 3 minutes to eat or you go crazy.

Adrenal insufficiency (hypoadrenia) is a condition in which the adrenal glands do not produce enough steroid hormones (esp cortisol, and/or aldosterone which regulates sodium, potassium and water retention). Craving for salt or salty foods due to the urinary losses of sodium is common. The worst degree of adrenal insufficiency would be Addison's disease which, if not treated, produce abdominal pain, diarrhea, vomiting, muscle weakness, fatigue, very low blood pressure, weight loss, kidney failure, changes in mood and personality. Shock may occur (adrenal crises) if the body is subjected to a stressful accident, injury, surgery or severe infection. Adrenal fatigue and reactive hypoglycemia, a refined food handling problem is almost always seen occurring together. Increased potassium is also a good indicator of this problem. Make sure you take our Adrenal Fatigue Questionnaire to determine if you have adrenal fatigue (insufficiency) and the severity.

The adrenals are controlled by the pituitary, which is in turn controlled by the hypothalamus (both glands located in the brain). The adrenals may suffer if either of these glands fail to make sufficient hormones to assist in regulating adrenal function. This is called secondary adrenal insufficiency, caused by a lack of ACTH from the pituitary or CRH by the hypothalamus.

Cushing's syndrome (HYPER ADRENIA) results from an association with the pituitary. Normally ACTH is released from the pituitary to stimulate the release of cortisol from the adrenal glands. In pituitary Cushings, a benign pituitary adenoma secretes ACTH. In Cushing's syndrome the excess cortisol is produced by adrenal gland tumors. Out side of the pituitary/adrenals can also produce ACTH that may affect the adrenals. Also, small cell lung cancer has an affect, bring Cushing's to the body. Cushings is therefore classified as to what is driving the production of excess cortisol.

CAUSES

It may be just part of a larger picture of all the glands in the body being weak.
It may be as a result of stress from an illness, or drugs, or kidney injury, or infection, surgery, radiation.
It may be as a result of a genetic disposition.

It may be from cysts or tumors in the area.
It may be from other stressors: changing jobs, divorce or separation, death in the family.
It may be from environmental toxicity (eg. moving into new building).
It is often caused by poor diet.
It may be caused from eating 'uppers' such as coffee, chocolate, caffeine products.
It may be caused from constant stress from family or job.

SOLUTION

Although there are supplements to assist in helping the adrenals heal, most of the healing comes from changing your lifestyle. How you spend your energy, conserve your energy, and create energy are important. What you eat and drink as well as the thoughts that feed your mind and the beliefs you base your life on. There is no magic bullet for this sort of disorder.

LIFESTYLE

Unless a new lifestyle is developed, complete healing is seldom experienced. Examine your life and the stressors, you will need to make changes. You must rest or the adrenal glands won't have an opportunity to heal. You must cut out the foods that are over-energizing the adrenals (whipping them so to speak, when they are down).

Distinguish which things in your life contribute to your health, which detracts. Make a complete list so you can start to change your lifestyle - these may be physical or leisure activities, beliefs, emotional patterns, diet and dietary supplements, eating patterns, relationships, work, exercises.

Figure out what robs you of your energy, target those factors. It may be the people you hang around. Some people leave you feeling drained, although it is not intentional, they drain your energy. Be sensitive to when this is happening and make changes to avoid those situations. No one has the right to your energy. No one can do anything to you that you don't let them.

You may feel weak or lacking energy from certain duties you have to do at home or work. If you have difficulty saying 'No' to situations that leave you weak or drained, start taking control of those situations.

Environmental poisons may weaken you and that includes the heating or lighting, or cooling of your work or home; of fragrances and cosmetic preparations you wear (the biggest allergy in the world is to synthetic fragrances). Certain foods can rob your energy; some make you feel energized, only to stress your
adrenals and make everything worse later (pop, coffee, sugar).

What can you do?
a) change the situation
b) change yourself to adapt to the situation or how you view the situation
c) leave the situation

How You View Situations:

What do you say to yourself (but don't speak out loud)? Listen and keep tract of your internal conversations for the next few days. List all the negative messages you tell yourself. Then figure out how you can change this dialogue to a positive message to yourself.

Practice breathing and relaxation exercises. Allow the breath to enter so that your abdomen (below your navel) expands. This means you are breathing from the diaphragm and not the lungs. Slow down your breathing. Find an affirmation that you like to help you relax. Or use meditation discs to help you learn to relax.

Take time off to rest, renew and rejuvenate. Try to be in bed and asleep before 11pm which is when people's second wind starts and their energy picks up. Sleep in on weekends if possible. If cortisol levels are high and keeping you awake at night, avoid exercise in the evening and do relaxation or meditation exercises. Avoid eating or drinking anything stimulating in the evening (caffeine drinks, sugar products, chocolate, black tea.

If you are photosensitive, watching tv or a computer screen can keep melatonin suppressed, therefore limit tv or computer activity to an 8:00 limitation. If cortisol levels are low late at night, exercising in the evening raises cortisol levels and you may sleep better.

Best EXERCISE is gentle exercise such as walking. Others are tai chi, swimming. Don't let your exercise stress you or tire you out. You want to take your energy and let it go into the body to heal the body, not expend it outside the body.
Aerobics builds stamina: fast walking, stair climbing, Nordic track workout, Cross country skiing, swimming, water aerobics, using a tread mill, doing wind sprints
Anaerobics build strength: weight lifting every other day; Isometric contractions; Isotonic exercises, weight machines, lifting and carrying weights, push-ups, sit-ups, chin-ups, stomach crunches.
To increase Flexibility (increase range of motion of joints and muscle length): Yoga, Tai Chi, Stretching, Slow Stretching Exercises.

Suggested Diet:

- **People with adrenal fatigue syndrome are missing something in their food intake, lacking the essential nutrients needed to meet the demands the cells experience under stress. A nutritious diet is a major factor in healing.**
- **Eat before 10 am to replenish blood sugar supplies even if it is just a snack. Between 6 am and 8 am cortisol levels rise rapidly, peaking around 8 am and when your cortisol levels are higher you may not feel like eating. The low liver function that often accompanies low adrenal function can also suppress early morning hunger.**
- **If you can eat lunch between 11-12 noon it is better but most people can't do this, so eat at noon, then have a healthy snack between 2-3 pm to help avoid the dipping cortisol level that often occurs between 3-4pm. Eat in the evening between 5-6 pm. Later in the evening have a few bites of something nutritious just before bedtime.**
- **Best diet includes fat, protein and starch carbohydrates like whole grains for every meal and snack.**
- **Don't do a salt free diet. Salt helps increase blood pressure for those with low blood pressure and helps restore some other functions related to sodium loss within the cells. If your blood pressure goes up to 140/90 cut back on the salt. Use seasalt, celtic salt, or Himalayan salt.**
- **Foods high in potassium such as fruit (esp. bananas and dried figs) may make adrenal fatigue worse.**
- **Avoid fruit and fruit juices in the morning – YES, REALLY!**
- **If you have a lack of hydrochloric acid, take a digestive supplement containing hydrochloric acid before meals. Avoid white flour, white rice and denatured products.**

Include in the Diet:

Raw and cooked vegetables
Brown rice
Raw nuts
Olive oil, Flaxseed Oil, Safflower oil
Whole grains
Sea fish, Chicken, Eggs, Goat cheese
Omega 6 oils: Borage, Evening Primrose Oil, Black Currant seed oil

Avoid:

Alcohol	**Caffeine**	**Tobacco**
Red meat	**Sugar**	**Fats, fried foods, ham, pork**
White flour products		

Testing Yourself for Food Sensitivities

1. Observation: avoid a food for two weeks then reintroduce that food and observe our reaction. It is often after a food is consumed the second or third time that the reaction is experienced. Write your findings down in a notebook for future use.

2. Keeping a Diary: This is good if sensitivities occur soon after eating but only occasionally such as less than twice a week. Record the symptoms, reactions and what you ate or drank. After 8-10 entries review and check them for common foods and/or ingredients.

3. Morning Food Hangovers: Note these occur from eating something the night before. You feel similar to an alcohol hangover. To determine, immediately drink a glass of water with 1/2 tsp of salt. If after 20-30 minutes you fee you are starting to come around and the hangover symptoms are going away, this is further indication that what you consumed yesterday is probably affecting you today. This hangover effect is not the usual fatigue felt in the morning from low adrenals, but from liver congestion. If this happens frequently, start recording in a diary the food reactions. After this has happened 4-5 times go back through the list and circle the items common to all of these days to get the culprit(s).

4. Cocoa Pulse Test: Take your pulse. Eat one particular food, then way 15-30 minutes and take your pulse again. If you find your pulse has increased by 10 beats a minute, you are severely reacting to that food.

5. Elimination Method: Totally eliminate all foods for a couple of days, then one by one start reintroducing a new food every second day. Keep track of your symptoms and what you ate. There may be several foods you find are problematic.

<u>Other Sensitivities to Watch For</u>

1. Environmental toxins such as perfumes, polluted air, airborne chemicals can affect taste buds and brain in a bizarre way and they can increase your adrenal fatigue.

2. Watch for sneaky sensitivities. For instance you might show a reaction to regular chicken, but are o.k. with organic chicken. Also, many show problems with rancid oils - if you can't smell a rancid oil from a fresh one, you can dip the tip of your finger into the oil and taste it - rancid oil is somewhat bitter.

3. Orange juice is specifically not recommended if you suffer from adrenal fatigue because it drives the blood sugar up so quickly and drop it so abruptly. Do not start the day with orange juice or any fruit. To test, take a large glass of orange juice by itself in the morning and see how you feel and function during the rest of the morning. Do this test when it is not important for you to be clear headed, well spoken or well co-ordinated that day.

Supplements:

In addition to our specific products:
1,000 mg Vit. C with bioflavonoids 4 times a day
800 IU mixed Tocopherol Vitamin E daily
50-100 mg B Complex morning and evening
500 B5 (pantothenic acid) 3 times daily
500 mg L Tyrosine on empty stomach. If you take it with 50 mg B6 and 100 mg Vit. C it absorbs better.
400 mg Magnesium citrate
400 mg Potassium citrate
90 mg zinc citrate
100-300 mg Raw adrenal concentrate

About Supplements

Vitamin C, You body adapts as you take more Vitamin C. Therefore when decreasing your vitamin C intake, do it gradually. A sudden drop in Vit. C intake can lead to symptoms of scurvy even when your actual levels are well above recommended levels. Decrease intake 500 mg ever 3-5 days. Symptoms of deficiency are gums that bleed during tooth brushing, swollen gums, easy bruising.

If you take blood thinners, monitor the blood clotting as Vitamin C is also an anti-coagulant and therefore you might need to lower your dosage of the medical drug.
Vitamin C works better with Vit. E and other antioxidants to decrease blood clotting and coagulation.

Some people decide to use Vitamin C and E as anti-coagulants instead of medical drugs.

Vitamin E Vitamin E not required for the adrenals to produce hormones but it is essential indirectly in different enzyme reactions in the adrenal cascade.. This is because the manufacture of adrenal hormones generates free radicals that can create great damage inside the cells if they aren't controlled. Too many free radicals slow down the enzyme reactions and if really extreme, can physically damage the adrenal cell structure. Vitamin E absorbs and neutralizes these damaging free radical molecules inside the adrenal glands (and elsewhere). Vitamin C enhances vitamin E's activity inside the cell by regenerating the capacity of vitamin E to sequester the free radicals. Therefore it is often necessary to take high amounts of vitamin E in order for the adrenals to maintain high levels of steroid production and recover adequately.

Make sure the Vitamin E is a 'tocopherol'. Most sold in the stores are in a form of d'-alpha-tocopherol which, although natural, is only a fraction of the complete vitamin E complex. The best vitamin E to get for adrenal regeneration is one with mixed tocopherols, specifically one rich in beta-tocopherols. Too much d-alpha-tocopherol can actually suppress the beta and other tocopherols necessary for adrenal rejuvenation.

Adult dose would be 800 IU mixed tocopherols a day (with meals). You must take vitamin E for at least 3 months before making significant improvement to the adrenals.

Caution with vitamin E: it does thin the blood so if you are taking blood thinners you will need to reduce the dosage of the blood thinners. Monitor your clotting regularly.

B Vitamins.

Vitamin B5 (Pantothenic Acid, like magnesium is important for energy production. It is converted into acetyl CoA which converts sugar into energy. It is present in higher quantity in the adrenals because so much energy is needed to produce the adrenal hormones. The combination of pantothenic acid with magnesium, vitamin E and vitamin C increases energy production which takes much of the fatigue out of the adrenals without over stimulating them. As an adult you will need 1500 mg a day (500 mg three times a day)

Vitamin B3 (Niacin) is very important to the adrenals. Large amounts are needed to form the molecular structure of certain niacin dependent coenzymes. It is recommended to take 25-50 mg a day. It has a tendency to make the skin turn red and tingle for about 1/2 hr. If it bothers you, get the non-flushing type such as niacin hexanol.

Vitamin B6 is a co-factor in several enzyme pathways. If you can't remember your dreams, you may have a B6 deficiency. Usually 50-100 mg a day is enough but if you still can't remember your dreams, you may need a special form of B6 called Pyridoxyl 5 Phosphate (P5P). a small percentage of the population has difficulty metabolizing the regular B6 (pyridoxine HCL) and will require the P5P form of B6. The P5P is a natural form and is usually more expensive.

B complex. The entire B complex is still needed in small quantities because they all work together as in a concert.
When buying a B complex, get one that has the B vitamins in proper proportions for the human body to utilize eg.:

- **50-100 mg B6**
- **75-125 mg B3**
- **200-400 mcg B12**

Smaller amounts are needed if you take the natural form (vs. synthetic). Food sources include whole grains, brewer's yeast, miso, Marmite, liver and rice bran syrup.

Minerals. Magnesium acts like a spark plug for the adrenals and the energy of every cell in the body. It is essential for production of enzymes and energy for the adrenal hormone cascade. It is specific for adrenal recovery. Approximately 400mg magnesium citrate is recommended daily to potentiate the action of the adrenals. Although magnesium is absorbed better after 8 pm, for best absorption then and at other times take magnesium and all other minerals and trace minerals with an acid like tomato juice or apple juice, at meals with whole grapes or meats, or with digestive aids. Food sources of magnesium

include brown rice, beans, nuts, seeds, sea vegetables like kelp.

Calcium helps settle the nervous system, calming a person. Calcium is best absorbed after 8 pm but it is better not to take calcium and magnesium together in this case. You can take them on alternate evenings, or at separate times in the later part of the same day, such as taking the magnesium closer to bedtime. Get calcium citrate or lactate (if you are not sensitive to milk). Typical requirement is 750 to 1,000 mg a day.

Although many people think milk is a good source of calcium there are some problems with it. Pasteurization changes the calcium complexes in the milk, making them less suitable for the body. Adding synthetic Vit. D2 (irradiated ergosterol) to the milk produces a tendency for the calcium in the milk to be deposited in your joints and other areas of the body instead of being taken up by the cells where needed. Certified raw milk and goats milk do not have these problems.

Many people are sensitive to milk. Other food sources include sesame seeds, tahini, humus; deep green vegetables like kale, bok choy, collard, swiss chard, parsley, broccoli; beans; nuts; sea vegetables such as kelp. Fish and meat stews where the bones are cooked in the dish are also excellent sources of calcium.

Trace Minerals only occur in very small amounts in the body but they are very important: zinc, manganese, selenium, molybdenum, chromium, copper, iodine. They have a calming effects on the body, very good if you are jittery, nervous or easily frightened or upset. When adrenals are fatigued, you become edgy and trace minerals can help feel more tranquil. They re absorbed and utilized better when taken in the evening with an acidic food or drink. Therefore have them with your meal when the digestive juices are secreted or with something acidic such as tomato juice or Vit. C. If needed the trace minerals can be taken throughout the day as a calming influence. Liquid trace minerals are easiest to absorb. Best food sources are sprouts, young plants, algae and sea vegetables.

Fiber. Mild constipation is sometimes present and increasing the amount of fiber can help re-establish the bowel function. As adrenals begin to heal, the body becomes more efficient and the liver often begins to detoxify more rapidly which allows more toxins in the bile secreted by the liver to be emptied into the intestines for elimination. Fiber prevents toxic build up in the large intestine by helping it move along more efficiently which then prevents reabsorption in the bowel back into the system. Food sources include vegetables, legumes, fruits, seeds and whole grains. You can also get psylium seed or other fiber mixtures. Avoid the brands that contain artificial colors and flavorings or sugars (or sugar like agents such as maltodextrin, sucrose, corn syrup solids and dextrose) which can stimulate Candida growth and upset blood glucose, undermining adrenal recovery. Even the 'sugar free' forms can contain maltodextrin and artificial sweeteners. Read your labels.

STRESS
If you are under stress, increase your intake of Vit. C, magnesium and B5. You will need to take this 4 times a day, or even hourly if the stress is severe.

<u>Herbal Helpers:</u>
Licorice root caps or tincture
Ashwagandha Root and Leaf
Korean Ginseng
Siberian Ginseng
Ginger Root
Gingko biloba
Astragalus
Passiflora (calming and stronger than chamomile)
Chamomile
St. John's Wort (relaxes nervous system)
Milk Thistle helps the liver which in turn helps the adrenals
Echinacea can increase white blood cell production and protect tissues

<u>Herbs for stress, anxiety:</u>
Holy Basil,

Sam-e
Licorice Root (Glycyrrhiza glabra): This naturally fortifies cortisone levels and may be the most important hormone in stress and adrenal fatigue. It also helps decrease hypoglycemia, a common side effect of decreased adrenal function. Even wound healing can be slowed down by stress, and can be improved by using licorice. Licorice can soothe nervous stomachs. Licorice also stimulates blood circulation in the heart and arteries as well and helping produce interferon-like substances by the immune system. There is concern that licorice increases blood pressure because it partially blocks the conversion of cortisol into cortisone which can produce higher amounts of circulating cortisol. Cortisol slightly increases contraction of medium arteries and heart muscle, causing the blood pressure to rise. According to Dr. Jonathan Wright you would have to consume 1/2 pd of licorice candy a day in order to produce any elevation in the blood pressure. People adrenal fatigue typically have low blood pressure, so this is not a concern. However, if you are concerned about high blood pressure when taking licorice root, monitor your levels and if it rises by taking the licorice root, limit your intake. Best way to take licorice is as a tea or supplement (the candy has too much sugar for the adrenals).

Ashwagandha Root and Leaf (Withania somnifera). This is also known as Indian ginseng (not related to ginseng however). It has been used for all kinds of weaknesses, as well as to promote strength and vigor. It has anti-inflammatory action and so it is used for rheumatic pains, inflamed joints and other conditions seen with adrenal fatigue. It is considered an adaptogen which is a substance that helps the body function more towards its normal level, for example if cortisol is too high, it lowers it; if it is too low, it raises it. In very high doses 9above 35 gms/day) it can actually inhibit adrenal function.

Korean Ginseng Root (Panax Ginseng). It has been shown to increase cortisol levels. Men seem to benefit it better than women. It can have adverse effects in some women. Chinese doctors will say it is too 'strong' or 'hot' for women, and burns out the adrenal life. Men should use it in small doses at first, then build up gradually.

Siberian Ginseng Root (Eleutherococus senticosus). This is good for women as well as men. It helps support and rejuvenate adrenal function, increase resistance to stress, normalize metabolism and regulate neurotransmitters. Counteracts mental fatigue, increases and sustains energy levels, physical stamina and endurance. Has antidepressant properties, calms anxiousness, improves sleeping, diminishes lethargy, lessens irritability and induces a feeling of well-being. Has been shown to normalize blood sugar, stimulate antibodies to bacteria and viruses, increase resistance to environmental pollutants, improves absorption of some B vitamins, decreases Vit. C loss. Not to be used if you have high blood pressure.

Ginger root (Zingiber officinale) is another adaptogen for the adrenals, helping modulate cortisol levels, normalizing blood pressure and heart rate; burn fat, increase energy and metabolic rate and stimulate digestive enzyme secretions for proteins and fatty acids. Ginger is good for nausea during pregnancy, decreases lethargy during convalescence from illness. You can get fresh ginger root at any supermarket.

Gingko leaf (Gingko biloba): Adrenals suffer tremendous oxidative stress when under stress themselves, especially when producing excess cortisol during the stress response. This leads to a significant increase in free radicals within the same adrenal cells that make the needed hormones. If free radicals are not neutralized, the production of hormones is slowed and tissue damage increases within the adrenal cells. Gingko is a powerful anti-oxidant that sequesters free radical production which protects the adrenals, the brain and liver from the free radical damage. It contains bioflavinoids that improves blood flow to the brain, ears, eyes, heart and extremities. Lessens tissue damage from inflammation and shock, elevates mood if prone to depression, decreases mental fatigue.

Avoid these herbs:

Ma Huang
Cola Nut
Strong Black teas
Stimulants
Sedatives
Hallucinogenic substances
Teas that overstimulate the nervous system.

Using Glandulars and Corticosteroids and Hormones

Glandulars have been used since 1898. The extracts are from bovine sources. The effect on adrenal fatigue is very positive.

Adrenal Cortical extracts are liquids or powder extracts made from extracts of the adrenal cortex. They support, fortify and restore normal adrenal function. They are not replacements hormones, but provide the essential constituents for adrenal repair. They are a cornerstone of effective therapy. Available in liquid or tablets. Use liquid in moderate to severe cases, use tablets in milder cases. Adult takes 6-12 tablets a day depending on severity (taken in 3-4 divided doses throughout the day). For the liquid form, one vial under the tongue 2-3 times a week (more frequent in severe cases).

What's the difference between adrenal cell extracts and natural or synthetic cortisol, and cortisol type steroids like cortisone, prednisone, prednisolone and other adrenal steroid hormones. Adrenal cell extracts nourish and help rebuild the adrenal cells so they can produce hormones as needed. Corticosteroids tend to reduce or shut down the activity of the adrenals because the brain senses the presence of these cortisol substitutes and withholds the signal ACTH it should ordinarily send to the adrenals to make hormones. Corticosteroids replace hormones, they mimic but they are not identical and therefore can't function the same as natural cortisol; they are up to 17 times more powerful than natural form of cortisol and therefore side effects are common. Even after a course of just a few days of corticosteroid medication, it takes several days to several weeks to adrenal function to return to normal. When taken for a long time, the adrenals may require up to 2 years to revive and produce cortisol on their own and some never recover. That is why it is difficult to get off a corticosteroid drug once you have been on it for a while. The catch 22 is that when you stop the corticosteroids, you crash and the symptoms return worse than ever because your adrenal activity is suppressed, so you keep taking them, but the longer you take them, the harder it is for your adrenals to regain proper function. Because corticosteroids mask the symptoms of adrenal fatigue and when used in excess, depress immune function, there is a greater risk from stress and infection. The therapy can actually become more hazardous than the original disease. In a few cases of severe adrenal fatigue a short therapeutic course of cortisol may be needed. If you must use corticosteroid therapy, it is best to use the natural form of cortisol: hydrocortisone. Even though this natural hormone diminishes or shuts down the adrenals while it is being taken and for several weeks after discontinued, it can be used effectively as a therapy for severe adrenal fatigue (doses of about 20 mg a day can give adrenals a rest for a period of time). It is recommended to take 5 or 7.5 mg orally before each meal and at bedtime (if sleep disturbances are part of the syndrome, 1 mg before bedtime may be helpful). After 6 months decrease the dosage and if the adrenals have recovered sufficiently they will pick up the slack and begin to respond normally, if not, a reduced dosage may be needed longer.

Take Natural cortisol with adrenal cell extracts and the adrenals rebuild much faster. After 2-3 months on both, the daily dose is slowly withdrawn while a vitamin C complex, the adrenal cell extracts and other supplements are increased. This is recommended for severe cases of Addison's.

DHEA is an androgen hormone secreted by the adrenals and is the precursor to several other sex hormones.. DHEA levels often become depressed during adrenal fatigue. In the U.S. you can purchase this as a dietary supplement. DHEA levels can be measured with saliva testing. If you are male, it may be a good idea to supplement by taking 25-200 mg (older men need more than younger men). Improvement will happen within 2-3 weeks. Taking more than 200 mg can create hostility, aggression and make you unpleasant to be around. There are also minor concerns that DHEA may be a threat of causing prostate cancer because it can be converted into dihydro-testosterone - if you take DHEA longer than 3 months have your PSA (prostate serum androgen) checked, and if it begins to rise, decrease or eliminate the DHEA. Dr. James Wilson who wrote the book on Adrenal Fatigue feels women don't do well with DHEA unless they are really fatigued. Taking 10-25 mg have produced side effects of facial hair and acne. Better for the women to look toward progesterone or pregnenolone. Some studies of women with lupus or chronic fatigue have found benefit from using 200 mg DHEA a day. More research needs to be done.

Progesterone and pregnenolone are hormones manufactured in the adrenal complex as well as in the

ovaries and testicles before they are metabolized into DHEA. Prenenolone is the first hormone to be made from cholesterol, progesterone is the second. Both can be converted into other adrenal hormones including sex hormones, aldosterone and cortisol. Look to your symptoms to determine what you might need. With adrenal fatigue, the sex hormone levels often fall because your adrenal glands can't manufacture adequate levels of hormones. One function that sex hormones serve is to act as antioxidants that help prevent the oxidative damage caused by cortisol. The lower the sex hormones, the more damage there is to tissues, especially if you are under stress. This is a key factor in rapid aging. Either pregnenolone or progesterone can be used to raise the hormonal levels in both men and women, and decrease some aspects of adrenal fatigue. Using these hormones allows your adrenals to not work so hard. They have been used to diminish PMS.

The most common cause of PMS seems to be too little progesterone and /or too little magnesium. Progesterone is made in both the ovaries and the adrenal glands. Women suffering from adrenal fatigue often have lower progesterone levels and increased PMS. The addition of oral pregnenolone or natural progesterone cream is often needed for relief of PMS.

Using pregnenolone 10-40 mg per day is usually sufficient, taken orally and 20-30 mg (1/4-1/2 tsp) progesterone which applied as a cream to the skin. Make sure you get the natural progesterone, not the synthetic progestin in tablet form which is often given by doctors in hormone replacement therapy. The progesterone contained in progesterone cream is a natural plant progesterone that has been converted into the same molecule as the progesterone in the body and can safely be used by most women.

Premenopausal women can apply it from the 12th day of the menstrual cycle to the 26th day (first day of bleeding is counted as the 1st day). Post menopausal women can use it for 21 days each month. We use the cream made by Dr. John Lee who supports this therapy and has written the book regarding it.