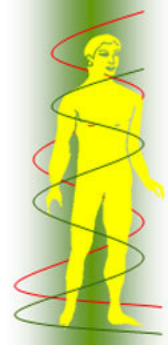


Understanding Stress



Understanding stress is the first step towards healing.



Stress is a very individual perception of a particular situation. Not every situation will be perceived as stress depending on the person that is experiencing it. Therefore stress is not always a negative factor it may sometimes even be necessary and welcome. Some people are not aware that a particular situation is causing them stress, some people are aware of it but continue to be exposed to it. When stress persists over a longer period of time it will induce illness.

Stress is a natural response to an actual or perceived threat to the homeostasis in our body. This threat may come from external factors (for example someone pointing a gun at us) but may also be induced by internal factors (such as psychological changes or illness). Whatever the stress factors if the source of stress is not dealt with in a short period of time stress itself will start becoming harmful to our body and induce homeostatic imbalances.

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What happens when we are stressed?

When the body is under stress the stress situation goes through various phases:

Short term stress response

This is when the sympathetic nervous system is activated in response to one or more sensory effectors so as to cope with the situation. There are two types of stress responses either only the first or both can occur.

The Central Nervous System sends nerve impulses to the Adrenal Gland Medulla to secrete Norepinephrine and Epinephrine. The effect of these hormones is to:

- Convert glycogen stored in the liver to glucose
- Increase blood pressure breathing rate and metabolic rate
- Change the blood flow patterns routing the blood to the muscles and sensory organs and decrease

ing the digestive and kidney activity.

Long term response

If the stress situation continues for a longer period of time then the sympathetic nervous system stimulates the Adrenal Gland cortex to produce corticosteroids (cortisol and aldosterone) which have the effect of:

- Retaining sodium ions and water by the kidneys thus increasing blood volume and blood pressure
- Breakdown proteins and fats and convert them to glucose
- Increase the blood glucose levels
- Suppress the immune system

The main job of our adrenal glands is to help you and your body deal with stress.

This stress can come from any source, from injury or disease to work and relationship problems

Back to normal

When the source of stress is no longer present the Central Nervous System brings the metabolism back to homeostasis by activating its' normal functions which are to get energy from food, getting rid of waste and managing the digestive system. This will automatically re-establish a balance of the blood sugar levels, Epinephrine and Norepinephrine are no longer produced. However if stress stimulus does not subside and the "back to normal" phase does not occur, then normal functioning of the organs is not possible and will over time create homeostatic imbalances of the heart and cardiovascular system, of the metabolism and many others. It is therefore important that people's lifestyle allow the body to recover sufficiently from stress situations so as to maintain health.

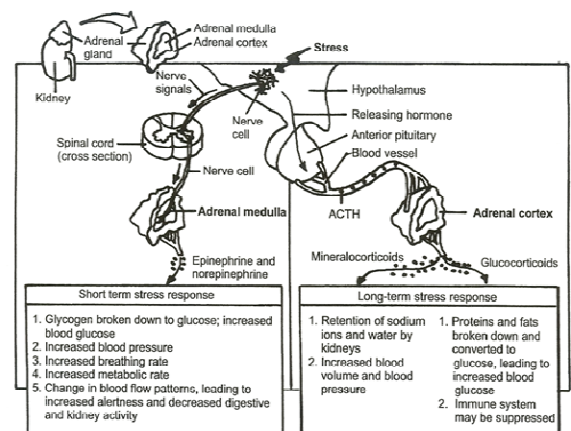


Figure 20

The effects of long term stress response on our Adrenal glands

To understand the effects of long term stress response on our adrenal glands one first has to be aware of the major role that these play in our life. The glands themselves are no bigger than a walnut and weigh less than a cherry and sit on top of our kidneys. They produce some of the most powerful hormones that are essential to life. Their main task is to help us deal with stress. The hormones secreted by the Adrenal gland cortex (cortisol, aldosterone and sex hormones) influence all major physiological processes in our body. They decide how the body uses carbohydrates and fats, they manage the conversion of fat and proteins into energy as well as tell our body when it is time to store fats, they regulate normal blood sugar levels and proper cardiovascular and gastrointestinal function. The adrenal glands also assist our immune system whereby they produce anti-inflammatory and antioxidant hormones to prevent adverse reactions

to alcohol, drugs, foods and environmental allergens. After mid-life the adrenal glands become a major supplier of sex hormones in both males and females. These hormones have a number of important functions that affect the body on physical, emotional and psychological levels, from the strength of your sex drive to your tendency to gain weight.

The adrenal glands also produce adrenalin and noradrenalin which are used by the body short term stress response to increase heart rate, blood pressure and blood glucose levels in response to short term stressors such as emotional disturbances, pain, exposure to temperature, anxiety.

It is therefore clear that the quality of life largely depends on how well our adrenal glands are functioning. Malfunction of the adrenal cortex hormone secretions is known as **Adrenal Fatigue**.



What is Cortisol?

In its normal function, cortisol helps us meet these challenges by converting proteins into energy, releasing glycogen and counteracting inflammation. For a short time, that's okay. But at sustained high levels, cortisol gradually tears your body down.

Sustained high cortisol levels destroy healthy muscle and bone, slow down healing and normal cell regeneration, co-opt biochemicals needed to make other vital hormones, impair digestion, metabolism and mental function, interfere with healthy endocrine function; and weaken your immune system.

Cortisol and weight gain

Cortisol has many actions in the body, and one ultimate goal of cortisol secretion is the provision of energy for the body. Cortisol stimulates fat and carbohydrate metabolism for fast energy, in addition to stimulating insulin release and maintenance of blood sugar levels. The end result of these actions is an increase in appetite. Therefore, chronic stress, or poorly managed stress, may lead to elevated cortisol levels that stimulate your appetite, with the end result being weight gain or difficulty losing unwanted pounds.

Cortisol not only promotes weight gain, but it can also affect where you put on the weight. Researchers have shown that stress and elevated cortisol tend to cause fat deposition in the abdominal area rather than in the hips. This fat deposition has been referred to as "toxic fat," since abdominal fat deposition is strongly correlated with the development of cardiovascular disease, including heart attacks and strokes.

The loss of DHEA production

When the adrenals are chronically overworked and straining to maintain high cortisol levels, they lose the capacity to produce DHEA in sufficient amounts. DHEA (the full name is dehydroepiandrosterone) is a precursor hormone to estrogen, progesterone, and testosterone, and is necessary to moderate the balance of hormones in your body. Insufficient DHEA contributes to fatigue, bone loss, loss of muscle mass, depression, aching joints, decreased sex drive, and impaired immune function.

Aldosterone

Regulates mineral (salt) content of the blood. It causes reabsorption of sodium and emulsion of potassium in the kidneys. It increases absorption of sodium in the intestinal tract and decreases the amount of sweat. Basically the more aldosterone hormone in our bodies the more our blood pressure increases.

What is Adrenal Fatigue?

The adrenal fatigue syndrome develops when the adrenal glands functions are impaired. This happens when the stress levels experienced by a person exceeds his or her body's capacity to compensate and recover from that stress. Healthy adrenal glands are very sensitive to physical, emotional and psychological change and respond to stress almost instantly by secreting minute amounts of steroid hormones. If physical, emotional, psychological and environmental factors take up too much influence on our lives then the resulting stress tires out our adrenals.

Unfortunately only extreme adrenal fatigue is recognised by the medical profession. This condition "Addison's disease" is life-threatening if untreated it is the rarest form of adrenal fatigue (it affects only about 4 people in every 100 000).

Other forms of adrenal fatigue affects however millions of people and many ways and in most cases it is left untreated or is misdiagnosed. This is because those suffering from adrenal fatigue do not always display signs of physical illness yet they are not healthy.



Stress affects us in many ways and so that one can say it affects all aspects of our body. The signs and symptoms of stress vary greatly from person to person and on the amount of stress that the person is under. Hereunder is a possible list of signs and symptoms of stress grouped into the categories: mind and emotions, physical aspects, behavioural aspects.

Effects on mind and emotions

- Anxiety
- Restlessness
- Worrying
- Irritability
- Depression
- Sadness
- Anger
- Mood swings
- Job dissatisfaction
- Feeling insecure
- Confusion
- Burnout
- Forgetfulness
- Resentment
- Guilt
- Inability to concentrate
- Seeing only the negatives
- Difficulty making decisions
- Repetitive or racing thoughts
- Poor judgement
- Loss of objectivity
- Desire to escape and/or run away
- Hypersensitive
- Sense of being overwhelmed
- Urge to laugh or cry at inappropriate moments
- Apathy
- Lack of confidence

Physical aspects

- Headache
- Chest pain
- Pounding heart
- High blood pressure
- Back pain
- Digestive problems
- Muscle tension and pain
- Sleep disturbances
- Fatigue
- Weight gain or loss
- Asthma or shortness of breath
- Skin problems
- Decreased sex drive
- Teeth grinding or jaw clenching
- Low blood sugar
- Allergies
- Arthritic pain
- Decreased immune response
- Premenstrual syndrome (PMS)
- Difficulties in menopause
- Respiratory infections
- Rhinitis
- Fibromyalgia
- Chronic fatigue syndrome
- Adult onset diabetes

Behavioural aspects

- Overeating
- Drug abuse
- Excessive drinking
- Increased smoking
- Social withdrawal
- Relationship conflicts
- Decreased productivity
- Blaming others
- Eating more or less.
- Sleeping too much or too little.
- Isolation from others
- Neglecting responsibilities
- Increasing alcohol and drug use.
- Nervous habits (e.g. nail biting, pacing).
- Overdoing activities such as exercising or shopping

General recommendations

The most important step in coping with stress is to be aware of the conscious and sub-conscious stress factors in ones life. The first thing to do is to try and find out what stressors can be eliminated with the least effort for example: slow down, take less appointments (work and socially), say no more often...): After that, one will have to identify those stress factors that require a more radical change of lifestyle (reduce the jet lags, go to bed at a regular time, change job, divorce...).

Once the factors have been identified you will be a step closer at being able to face them and find a solution. Exercise regularly during the week (2 to 3 times) even though you may not be the fitness studio freak you should find some sort of exercise that accommodates with your life (going to work on foot could be even a good start). Whatever you choose to do it is imperative that the exercise is regular.

Take time for yourself by finding a recreational ac-

tivity that will rest your mind such as reading, music or painting. Take up a hobby.

You may also want to try some meditative exercise such as yoga, meditation. Meditation is most effective when done daily. It does not have to have a religious or spiritual connotation to be beneficial. Try meditating using a nice thought or feeling. Deep breathing is an efficient way to face stressful situations when you are on the move and feel stressed. It is not very time consuming and can really be efficient. Deep breathing is done best 4 or 5 times where you breathe in deeply through the nose, hold your breath for a few seconds and then exhale slowly through the mouth whilst placing the tongue at the top of the teeth next to the gum line.

If the stress factor is more of a personal issue and you feel you cannot cope on your own then one might think about some counseling (psychological, religious and financial).

Herbs

There is a great amount of herbs that help cope with stress and its effects such as:

- Bilberry: prevents destruction, mutation and premature death of cells throughout the body
- Gingko Biloba: aids in proper brain function and good circulation
- Milk thistle: cleanses and protect the liver and has antioxidant properties.
- Liquorice root: supports adrenal function, increases energy, endurance and vitality.

Diet

Changing diet will be most beneficial to reducing stress. Eliminate stimulant foods that will increase stress on the body (caffeine, alcohol, fats, soft drinks...). Add more vegetables and fruit to the diet.

Try to eat at least 50% of the vegetables and fruit raw since these not only are rich in vitamins and minerals but also in flavonoid compounds which deal with the free radicals in the body. Eliminate or reduce considerably dairy products since these also act as stimulant. Avoid mood altering drugs, and tobacco since they may relieve stress temporarily but do not solve the problem.

Supplements

Long term stress suppresses the immune system and therefore it is important to boost it with supplements to replace the depleted vitamins and minerals which support the immune system.

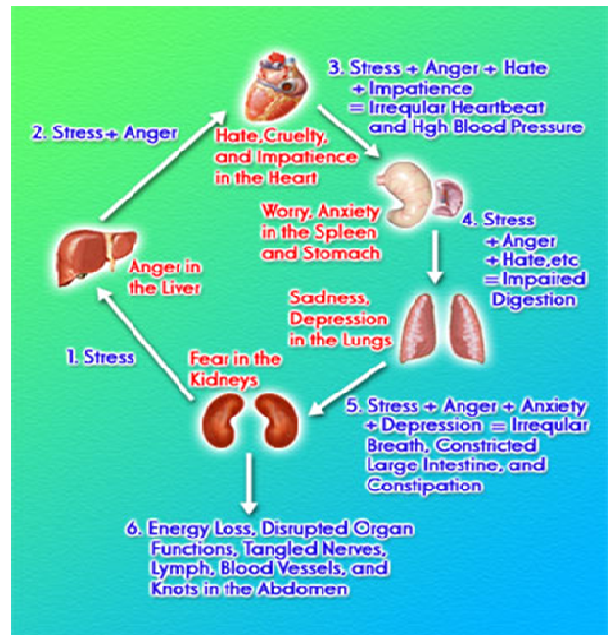
The main anti stress vitamins are:

- Vitamin A is required because of its anti oxidant properties
- Vitamin B complex has an important role because niacin allows to calm the mind and panthotenic acid also is efficient for stress relief since it allows normal functioning of the adrenal glands and allows to remove toxins from the body.
- Vitamin C is required for the synthesis of cortisol which is produced in abundance by the adrenal glands and acts as an anti-oxidant.
- Vitamin E is also believed to act as an antioxidant and therefore beneficial for stress.
- Also calcium and magnesium is depleted quicker in the presence of stress and deficiency can result in anxiety, fear and even hallucinations.

Attention! Some supplements and Herbs should not be taken without professional medical care advice.

Stress and Traditional Chinese Medicine

Qi is the unseen life force energy. It is the vital force that permeates and nurtures everything in the universe. Qi activates all body processes and moves throughout the body's meridian, nerve system, blood vessels and lymph glands. If the Qi is not allowed to flow freely, the body is unbalanced and sickness follows. In a state of homeostasis, the body has the ability to monitor and regulate the Qi by itself. But with the constant bombardment of everyday stressors, it tends to become blocked and stagnate. The body's vital functions are impaired and the unhealthy energies overflow into the other bodily systems and surface as negative emotions and disease. The vital energy during stress response will be channeled to the adrenals, the endocrine liver, the pancreas, the lungs, the brain and the heart whilst the stomach, the kidney (and therefore also the bladder) the spleen and exocrine liver and gallbladder will be receive less energy. When stress persists the patient will therefore be experiencing congestion on both those meridians where too little energy is flowing to as well as an over activity on those where too much energy is flowing to.



Adrenal glands are associated to the Root Chakra

The endocrine gland which relates to the 1st chakra is the adrenals. The location is the base of the spine and lower pelvic area. It's function is to govern survival, security and physical needs. Imbalances may manifest as bone or reproductive problems, low self-esteem or having difficulty in reaching goals.

Reflexology against stress

Reflexology induces relaxation and by so doing helps mask the effects of stress. Having treatment sessions at regular intervals will allow to alleviate the effects of stress. Furthermore the reflexology treatment will encourage the body to boost its own self-healing and self-repair mechanisms thus enhancing the restorative functions of the body and so help remove the illnesses that stress creates. As you find that week after week you can deal with stress both body and mind will feel the benefit and your life will improve.