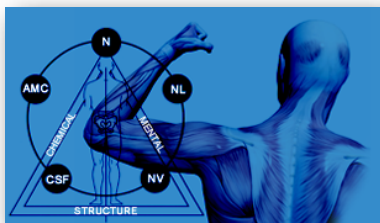


# Pathways To Health



A Healthcare and Selfcare Newsletter From The International College of Applied Kinesiology - USA Chapter

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Your doctor of applied kinesiology is uniquely trained and qualified to provide care for the health issues covered in this newsletter.

Please share this newsletter with friends and family!

\*The information in this newsletter is not intended to diagnose or treat the individual.

Could A Chronic and Undiagnosed Health Problem Be Due To Stress?

## Stress: A Critical Factor For Your Health

While life presents us many stressors, our body response to stress is the same. There is good stress and bad stress, both cause the same physiologic reaction inside us. The body does not differentiate between the two, but the mind can. A stressful car crash will release the same adrenal steroids as an extremely exciting event like a wedding. After all, the fight or flee response is designed to save our lives when necessary.

Adrenalin, cortisol, and aldosterone are a few the main players in the adrenal gland's response to stress. It's when chronic stress ensues that our tissues and normal body processes will go awry.

*The Stress of Life* was published in 1956 by a scientist, Hans Selye, who is renowned as the father of stress research in his time. He describes biological changes resulting from stressing the adrenal glands ranging from the alarm stage to the resistance stage and finally the exhaustion or the recovery stage.

He found stress is monitored in the brain and adrenal glands. The brain centers include the hypothalamus and pituitary. These centers in conjunction with the adrenal glands, which sit on top of the kidneys, form the hypothalamic pituitary adrenal axis. These communicate with each other through a group of hormones called glucocorticoids. Glucocorticoids affect almost every cell throughout the body: the brain, gut, skin, immune system, sex organs and more.

Selye defined three stages of how we react to stress. When we are young, it is the alarm stage that occurs when we overreact to stress. We can all relate to a faster heart beat and rapid breathing when we were under stress. Over time, becoming accustomed to stress, the resistance stage sets in. This is where adaptation occurs and the body does not overly react. Finally, when stress becomes too excessive, the exhaustion stage arrives.

More stress is needed to keep functioning at the exhaustion stage in order to force the hypothalamic pituitary adrenal axis to produce more adrenal hormones. We're all familiar with people who add on more and more stress in their lives in order to continue functioning. Selye found that it didn't matter whether the stress was good or bad: when he kept stressing the animals, they all developed illnesses. This led to the popular concept that stress is bad. But we know there is good stress and bad stress.

Consequently, Selye later wrote a book titled, *Stress without Distress*. To sum up that book in a short sentence, the fastest way to kill a tortoise is to make it run all the time and the fastest way to kill a horse is to not let it run. Stress is only important when it is out of control.

Prolonged amounts of stress will result in cellular injury and illness. Chronic stress causes the outer cortex of the adrenal glands to swell. The corticosteroids released by the adrenals over a long period of time create a chemical stress on the tissues.



**A**fter the adrenals reacted to a stressful incident, it caused changes in the immune and gastrointestinal system, for instance. However, the adrenal changes came first. These tissue changes can be measured in standard blood tests, changes in blood pressure while lying/seated/standing and specific manual muscle testing results identified by the skilled applied kinesiologist during an office visit.

Tell your AK practitioner if you have experienced changes in blood pressure, dizziness when standing up quickly from a seated position, difficulty concentrating or memory troubles, immune system or autoimmune disorders, changes in hormones, slow healing, skin or lung reactions. These may be a few clues to your overall adrenal response.

In adrenal hormone production, cholesterol is first transformed into a hormone known as pregnenolone and then into progesterone in both males and females. These chemical reactions require a specific B vitamin known as niacin or niacinamide in sufficient amounts for proper conversion. After this step, the stress hormones cortisol and DHEA are produced, as well as estrogen and testosterone. In each step specific nutrients must be available for the glands to produce the hormones. A diet low in cholesterol might compromise the body's ability to produce enough adrenal and other hormones.

There are a number of nutrients that are essential for proper adrenal hormone production. A few of these are vitamin C, pantothenic acid, vitamin B6, B12, folic acid, niacin, zinc and magnesium. Applied kinesiology clinicians will evaluate your particular

nutrient status and take into consideration various lifestyle influences to create a comprehensive approach to your case.

Pantothenic acid, vitamin B5, is key for producing the stress related hormones. The problem is that when you're under severe stress the demand for these essential nutrients increases, and your adrenal production will dramatically slow down. Pantothenic acid is found in whole grains, legumes, cauliflower, broccoli, salmon, liver, sweet potatoes and tomatoes.

Remember, it doesn't matter whether the stress is physical, thermal, chemical, or mental. Your body will react the same. To generalize the approach to managing stress: modify your lifestyle.

Reduce the different stressors as much as possible. This means eating a diet that is healthy with less carbohydrates, little or no artificial colorings or preservatives, limiting caffeine and alcohol, getting adequate sleep, exercising moderately, and where ever you can, reducing the extremes of stress. Most importantly, working with your applied kinesiologist will help guide the approach you take to healthy adrenal function.

#### References

David Leaf, DC is a diplomate and certified teacher for the ICAK, past Chairman of the Board for the ICAK-USA chapter, and has written reference manuals for doctors to learn applied kinesiology. Dr. Leaf has done extensive work internationally with professional athletes and athletic teams and practices in Plymouth, Massachusetts.

## AK and the Adrenal Glands: Published Clinical Outcomes

Adrenal stress disorders (ASD) are one of the most common conditions in the world, and stress-related illnesses are one of the most common conditions faced by functional medical physicians. You will discuss stress with a large number of patients simply because most sick people -- especially if they've been sick for any length of time -- are involved with stress as a complicating factor of their health problems.

Applied kinesiology manual muscle testing procedures can be a useful screening test for patients with ASD. A forthcoming study by three ICAK members (n = 110) demonstrates statistically significant correlations between the AK MMT for adrenal gland dysfunctions and salivary hormone tests for this condition. This paper suggests that internal medicine and physical medicine may interact.

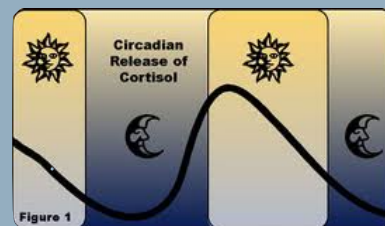
It also implies that use of adrenal gland nutritional support during the early phase of symptom development may aid in the reversal of this condition in vulnerable individuals and their children. Recent clinical evidence suggests that this might be the case. (Zohar et al., 2011; Suris et al., 2010; Yehuda & Golier, 2009; de Quervain & Margraf, 2008)

Members of the ICAK have published an impressive amount of literature on the effective diagnosis and treatment of this condition since Goodheart published an article on this in 1964.

#### Further References



- *Chronically high cortisol breaks every part of your body down*
- *Waking tired and gaining weight, especially abdominal fat are common symptoms of high cortisol*



Stress Commonly Results In Elevated Cortisol Levels...

## High Cortisol - Cause for a Constellation of Complaints

**Stress**, if severe and prolonged enough, will destroy your health, and much of the damage is due to the high cortisol levels caused by chronic stress.

Cortisol is a hormone secreted by your adrenal glands located immediately above your kidneys and is the hormone most responsible for maintaining your body functions in response to stress. It is normal for your cortisol levels to be highest upon waking in the morning, to be lower later in the day, and to be lowest at night. This is the normal rhythm of cortisol in relation to time of day (circadian rhythm).

Cortisol is antagonistic to the effects of insulin. Insulin is the most anabolic hormone in your body and it controls the repair and maintenance of every part of your body. Cortisol is the most catabolic hormone in your body as its' primary function is to breakdown body tissues to produce energy in response to stress. Though, in the short-term, cortisol allows you to adapt to stress, long-term high cortisol will break your body down.

Cortisol acts as a natural antihistamine, but also lowers immunity and resistance to infection. High cortisol levels decrease immune response, as measured through secretory IgA, in the linings of the lungs, throat, kidneys, bladder, and intestinal tract. Abnormal cortisol levels also weaken the intestinal wall, resulting in increased risk for developing ulcers, colitis, Crohn's Disease, Irritable Bowel Syndrome, and abnormal intestinal flora.

Abdominal fat is a common outcome of high cortisol and is a symptom of impaired insulin control (insulin resistance) and type II diabetes. Muscle and joint aches and pain often result from impaired ability to maintain muscle, cartilage, and connective tissue. The same process predisposes to osteoporosis, thinning of skin, poor wound healing, and muscle wasting. Thyroid problems are often caused by poor regulation of cortisol.

Abnormal circadian rhythm of cortisol will usually show as waking tired in the morning (high cortisol upsets the normal REM stage sleep), fatigue during the day along with cravinging caffeine and sugar to provide temporary relief, and difficulty getting to sleep at night. The disturbed sleep has shown to be causative of depression.

High cortisol levels can actually cause atrophy of the region of the brain where memories are processed and stored (hippocampus) and this phenomenon probably accounts for the impaired memory seen in people who are chronically stressed.

Often patients will see doctors who are not trained to recognize this wide collection of symptoms and will diagnose the individual conditions, such as depression or osteoporosis, but not the underlying issue of don't get of these changes can over time result in the constellation of symptoms commonly called Chronic Fatigue Syndrome or Fibromyalgia.

Doctors using applied kinesiology are uniquely trained to diagnose and help solve high cortisol and its' adverse effects on your health. History, physical exams, lab testing, and applied kinesiology exams can clearly demonstrate high cortisol and determine the best course of action to solve it.

### **Selfcare for High Cortisol**

#### Rest and Relaxation

Get enough sleep. Sleep deprivation is incredibly harmful; most of us need eight hours.

Have some unstructured time for relaxation, and make sure to find satisfaction in your work, in a hobby, or both.

#### Balance Your Nervous System

- General physical activity
- Intense interval exercise
- Yoga, tai chi, or chi gong
- Full abdominal breathing
- Meditation, contemplation, prayer
- Practice gratitude
- May require chiropractic care, craniosacral therapy, acupuncture

#### Balance Your Blood Sugar

Eat whole, natural, unrefined foods  
Eat regularly

#### Avoid Stimulants

Avoid "energy" drinks  
Avoid caffeine to excess

#### Balance Zinc

Zinc decreases cortisol. If you are deficient, which is common, a small dose at lunch and at dinner will help rebalance your cortisol levels.

#### References

# Q&A

***I'm busy. What if there is not a way for me to decrease stress in my life?***

Our culture promotes stress; it tends to be too busy and too complicated overstimulating the sympathetic system and making us stressed. One of the most stressful habits most people have is to multitask. Not only does multitasking make you feel anxious, it is, also, very inefficient, because more mistakes are made than when doing one task at a time. Use microtasking instead of multitasking - do only one task at a time even if you are regularly switching from one task to another.

Even in a very hectic schedule it is possible to schedule some unstructured time in your daily habit and this approach is very relaxing and nurturing. Also, regularly look for small changes that you can make in your lifestyle that will have the effect of simplifying your life.

***If I can only handle one change right now which one do you think it should be?***

Many (most?) people are sleep deprived; you may need to sleep more.

"It's not an indulgence, it's not a luxury, and actually a good night's sleep can have a huge impact on your ability to come up with novel solutions to complex problems. So if you want the best out of your team (or your children) you let them get the sleep that they need." – Russell Foster, Professor of Circadian Neuroscience; Oxford University

If you have insomnia, seek care from your doctor using applied kinesiology. The neurotransmitters that regulate sleep, GABA and serotonin, can be optimized through diet and supplements specific to your needs as determined exams that include applied kinesiology methods. Common deficiencies that cause insomnia include magnesium for GABA production and B-6, which is needed to make melatonin.

***What would be the second most important change to make?***

Exercise. More physical activity and essentially any kind of exercise improves your responses to stress. Interval exercise, in particular, has been shown to improve regulation of the autonomic nervous system (increased tone of the parasympathetic nervous system) more effectively than steady paced exercise. To benefit from interval exercise, you may need to train for very short periods initially. You will energized if you train the right length of time, whereas, you will feel tired if you train for too long. Adjust your training length accordingly.

***What effect does diet have on stress?***

Cortisol is a hormone that stimulates your system to make glucose (blood sugar) from proteins (gluconeogenesis). Eating regularly and avoiding sugars and starchy foods balances blood sugar and lowers cortisol levels.

***Does stress cause thyroid problems?***

Yes. Autoimmune thyroid diseases (Grave's and Hashimoto's Disease) have been shown to be triggered by chronic stress. Low thyroid (hypothyroidism) too appears to be associated with chronic stress and adrenal gland dysfunction.