



# Health Matters

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## Stress and Stress-Related Health Problems

### Redefining Stress

In 1935 Czech-Canadian researcher Hans Selye first used the word “stress” to describe situations that are perceived as threatening to life or well-being and which evoke survival responses. Today, stress is a buzzword that permeates everyday language.



Stuck between natural instinct and rational thought, modern man’s heart still races and his muscles tense, though he ends up merely shaking with the excess energy intended for the fight or flight that never happens. If the relaxation phase occurs, it is slow in coming.

Cortisol helps replenish energy reserves, quells inflammation, and assists brain and immune function to help restore homeostasis to overworked body systems. Stepping up cortisol production soothes the savage stress beast . . . for a while. However, the organs and tissues that play roles in surviving a life-threatening event can themselves suffer stress from being chronically “revved up,” while the organs and tissues that *don’t* contribute to survival suffer from chronic poor blood supply and suboptimal levels of oxygen, nutrients, and hormones. Continued long term, these imbalances can result in potentially serious health problems.

### Ancient Stress

Even though the use of the word “stress” to denote a threat to one’s well-being or survival is recent in the big picture of time, responding to life-threatening situations is as old as human history.

When our ancient ancestor Og was chased by a saber-toothed tiger, he was equipped with two basic options: fight or flight. He instinctively fled to keep from becoming lunch. The three parts of a stress response occurred: the threat (tiger), the response (flight), and the resolution (relaxation) that is so beneficial for health.

### Modern Stress

In modern times, we are still similarly equipped with the same two primitive options when we perceive we are in danger. Modern stress, however, seldom involves tigers. Not to worry—life provides an ample supply of other types of stress: relationship, workplace, financial, and social stresses, plus the stress of airports, caretaking, poor health, bereavement, gridlock traffic, expectations, going to the dentist, overcrowding, noise, excessive mental work, the evening news, and simply having too much to deal with. Even positive occasions such as holidays and weddings can be stressful.

Fighting or fleeing doesn’t solve many of modern man’s stresses. Og’s fight-or-flight responses have already been at least partially civilized out of modern man, who now *thinks* and *anticipates the consequences* before he acts.

### The Physiology of Acute Stress

Because all acutely stressful situations produce a similar response, Selye called the response General Adaptation Syndrome (GAS). When faced with acute danger, the hypothalamus and pituitary glands immediately instruct other glands to produce several hormones (including adrenalin and cortisol) to enable a modern Og to react quickly and with super strength. In a split second, the liver releases stores of blood sugar, the heart beats forcefully to circulate oxygen and blood sugar, the blood is prepared to quickly clot, the bone marrow releases red blood cells to help meet increased demand for oxygen, the spleen releases white blood cells in anticipation of injury and infection, blood pressure rises, breathing quickens, perspiration increases, and muscles tense.

These same changes that help the body react quickly to danger also divert blood from body parts that don’t assist the fight or flight effort: digestive organs, bones, kidneys, reproductive organs, and skin.

After the stress event has ended, it is stored as a conditioned response in the hippocampus, the brain’s filing cabinet for long-term memory of emotionally-laden events to help anticipate, react to, or avoid similar events in the future.

### Too Much of A Good Thing

Being chronically “on high alert” from unrelenting stress is exhausting. The adrenal glands run damage control by making and releasing more than usual amounts of cortisol, the “stress hormone.”

### Signs/Symptoms of Chronic Stress

- Elevated blood pressure
- Elevated blood sugar levels
- Elevated total cholesterol levels
- Fatigue, muscle spasms, and tension
- Heart palpitations and arrhythmias
- Cold hands and feet
- Rapid heart rate and breathing
- Prolonged or chronic infections/allergies
- Depression and anxiety
- Personality changes
- Skin changes: acne and hives
- Digestive problems, incl. gastric ulcers
- Loss of concentration and memory
- Premature aging - Sleep disorders
- Aggravation of pre-existing health issues
- Lack of interest in sex
- Worry, irritability, fear, nervousness
- Clenched jaws and fists
- Addiction to food, drugs, and smoking

### Increased Risk of Chronic Diseases

Chronic stress contributes to health problems mostly from the toxic effects of elevated cortisol and adrenalin levels on body tissues. These effects include elevated blood sugar, cholesterol, blood pressure, and insulin levels in addition to demineralization of bones, (cont. p.2)

# Stress and Stress-Related Health Problems, cont.

endocrine imbalances, and immune suppression, each of which contributes to increased risk of heart disease, stroke, chronic infections, Type II diabetes, allergies, inflammation, and autoimmune diseases. Virtually any preexisting health problem can worsen under chronic stress.

## Too Little of a Good Thing

What goes up must come down, and so it is with cortisol production as the adrenal glands tire from overwork. The deficiency of cortisol is especially apparent in brain function, showing up as difficulty with memory, emotions, and concentration, all of which contribute to stress becoming a vicious cycle: its own solution is blocked.

## Signs/Symptoms of Adrenal Fatigue/Cortisol Deficiency

Fatigue with stress or after exercise - Debilitating reactions to stress  
Low blood pressure - Lightheadedness on standing  
Craving of sugar, salt, and spicy food - Intolerance of sugar/carbohydrates  
Intolerance of fasting - Low blood sugar esp. at 11 a.m. and 4 p.m.  
Intolerance of drugs and alcohol - Intolerance of temperature extremes  
Insomnia, esp. waking between 2 & 3 a.m. - Drowsiness and confusion from stress  
Arthritis, asthma, hay fever, allergies - Nausea, vomiting, and diarrhea  
Inability to concentrate - Sparse body hair - Perfectionism

Cortisol levels, normally at their lowest at night and highest in the morning, are disturbed, resulting in insomnia and difficulty waking. People experiencing adrenal fatigue report feeling as if they are “running on fumes,” and are often unable to recover from stress as easily as they did in the past. Perfectionism can result from efforts to rein in a life that seems out of the stressed person’s control.

## Stressing Gender Differences

Men and women react differently to stress. Women report more nervousness, fatigue, and urge to cry when stressed, while men experience more anger, irritability, and insomnia. Women under stress are prone to exhibit “tend and befriend” behaviors that are likely due to the effects of oxytocin, a hormone linked to maternal love and nurturing that buffers the stress response. Men under stress are more likely to engage in classic fight or flight behaviors and overt anger. After a stressful day at work, a woman may come home and nurture her children to help herself feel safe. A man under the same stress will come home, either be silent or yell, then likely sequester himself to recover from his stress. Women seek more healthcare for adrenal fatigue, while men have a higher death rate from stress-related diseases.

## Stress is Optional

Similar to the saying that it isn’t the fall that kills you, it’s the landing, Selye said that it isn’t stress, but the reaction to it that is killing us. Selye determined that events themselves are actually neutral and that they only become defined as negative or positive when assigned meaning based on subjective experience. Because all people don’t perceive the same event as stressful, whether or not many of life’s events are considered stressful is left up to perception.

For example, a delayed flight may cause one passenger’s neck veins to bulge with anger about the disruption of his

schedule, while another passenger perceives the delay as an opportunity to read an extra chapter in a good book.

Objectively observing one’s own habitual responses to life’s events can help foster insight into habits that perpetuate stress. Also, practicing overcoming life’s small stresses (with special attention to the relaxation phase following stress) can help create healthier responses to stress and help develop stress-resistance.

## Stress Can be Good For You

Stress is beneficial if it ultimately results in gains of confidence, success, creativity, social skills, and fun. A stress-free life can be boring and unfulfilling.

## All Stressed Up and Nowhere to Go

Activation of a stress response without fight or flight behavior is harmful to health. Exercise, a modern equivalent of the fight or flight behavior, “burns up” adrenalin and is routinely recommended for prevention of stress-related diseases. If a person is too sick, however, exercise itself can become stressful. Exercising at a level that is not exhausting and from which the heart rate and breathing recover in less than three minutes is advised, as are yoga and Pilates™ for low-stress, conditioning.



## Mainstream Medical Treatment

Mainstream medical treatment of stress and adrenal fatigue primarily consists of prescribing drugs for depression, anxiety, and “stress.” Although drugs can be useful as a short-term approach for a crisis situation, they fail to address the underlying pathology and their habitual use may result in new problems.

## Diet and Lifestyle Considerations

Many of the symptoms of adrenal fatigue are either directly or indirectly related to fluctuating blood sugar. Low blood sugar results in the increased secretion of adrenalin, which causes the shaking associated with low blood sugar. Strict avoidance of all sugary foods and drinks is necessary for recovery. A moderate increase of dietary salt intake can benefit sufferers of adrenal fatigue and is encouraged for those who don’t require salt restricted diets for other reasons. Avoiding alcohol, caffeine, food additives, foods to which you are allergic, and fasting can be beneficial, as can eating small, frequent meals, doing more of what relaxes you, and identifying toxic or stressful relationships and minimizing your exposure to them. The value of sleep in assisting recovery of health cannot be overstated. Going to bed at 10 p.m. is in synch with nature’s biorhythms.

## Alternative Medical Approaches

Breathing techniques have been shown to reduce stress. Cognitive therapy may also be recommended to help develop new responses to old stressors. Practitioners trained in nutritional medicine may utilize natural therapies to boost endocrine function and address stress-related diseases, including B-vitamins (especially B-5 or pantothenic acid) and magnesium (initially intravenously, then orally), plus adaptogenic herbs (e.g., ashwagandha, astragalus, rhodiola, schizandra, and ginseng), and hormonal support. Neurotransmitter balancing can especially help relieve the emotional symptoms of chronic stress, but also digestive and endocrine symptoms.

## Recommended Reading

*Adrenal Fatigue: The 21st Century Stress Syndrome* by James Wilson, N.D., D.C., Ph.D.; *Why Zebras Don't Get Ulcers* by Robert Sapolsky, Ph.D.

All content in this newsletter is intended to be informational and is not to be taken as medical advice or to replace medical care.