

Chronic Stress Puts Your Health at Risk
(What part adrenaline and cortisol play)
Chronic stress can wreak havoc on your mind and body.
Take steps to control your stress.

By Mayo Clinic Staff

Your body is hard-wired to react to stress in ways meant to protect you against threats from predators and other aggressors. Such threats are rare today, but that doesn't mean that life is free of stress.

On the contrary, you undoubtedly face multiple demands each day, such as shouldering a huge workload, making ends meet and taking care of your family. Your body treats these so-called minor hassles as threats. As a result you may feel as if you're constantly under assault. But you can fight back. You don't have to let stress control your life.

Understanding the natural stress response

When you encounter a perceived threat — a large dog barks at you during your morning walk, for instance — your hypothalamus, a tiny region at the base of your brain, sets off an alarm system in your body. Through a combination of nerve and hormonal signals, this system prompts your adrenal glands, located atop your kidneys, to release a surge of hormones, including adrenaline and cortisol.

Adrenaline increases your heart rate, elevates your blood pressure and boosts energy supplies. Cortisol, the primary stress hormone, increases sugars (glucose) in the bloodstream, enhances your brain's use of glucose and increases the availability of substances that repair tissues.

Cortisol also curbs functions that would be nonessential or detrimental in a fight-or-flight situation. It alters immune system responses and suppresses the digestive system, the reproductive system and growth processes. This complex natural alarm system also communicates with regions of your brain that control mood, motivation and fear.

When the natural stress response goes haywire

The body's stress-response system is usually self-limiting. Once a perceived threat has passed, hormone levels return to normal. As adrenaline and cortisol levels drop, your heart rate and blood pressure return to baseline levels, and other systems resume their regular activities.

But when stressors are always present and you constantly feel under attack, that fight-or-flight reaction stays turned on.

The long-term activation of the stress-response system — and the subsequent overexposure to cortisol and other stress hormones — can disrupt almost all your body's processes. This puts you at increased risk of numerous health problems, including:

Anxiety

Depression

Digestive problems

Headaches

Heart disease

Sleep problems

Weight gain

Memory and concentration impairment

That's why it's so important to learn healthy ways to cope with the stressors in your life.

Why you react to life stressors the way you do

Your reaction to a potentially stressful event is different from anyone else's. How you react to stressors in your life is affected by such factors as:

Genetics. The genes that control the stress response keep most people on a fairly even keel, only occasionally priming the body for fight or flight. Overactive or underactive stress responses may stem from slight differences in these genes.

Life experiences. Strong stress reactions sometimes can be traced to traumatic events. People who were neglected or abused as children tend to be particularly vulnerable to stress. The same is true of people who have experienced violent crime, airplane crash survivors, military personnel, police officers and firefighters.

You may have some friends who seem laid-back about almost everything and others who react strongly at the slightest stress. Most reactions to life stressors fall somewhere between those extremes.

Learning to react to stress in a healthy way

Stressful events are a fact of life. And you may not be able to change your current situation. But you can take steps to manage the impact these events have on you.

You can learn to identify what stresses you and how to take care of yourself physically and emotionally in the face of stressful situations.

Stress management strategies include:

Eating a healthy diet and getting regular exercise and plenty of sleep

Practicing relaxation techniques such as trying yoga, practicing deep breathing, getting a massage or learning to meditate

Taking time for hobbies, such as reading a book or listening to music

Fostering healthy friendships

Having a sense of humor

Volunteering in your community

Seeking professional counseling when needed

The payoff for learning to manage stress is peace of mind and — perhaps — a longer, healthier life.