

THE EFFECTS OF CHRONIC STRESS ON THE BODY AND METHODS OF REDUCING IT

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Abstract: This article provides a comprehensive overview of the effects of chronic stress on physiological, neuroendocrine, and psychological changes in the body. The article analyzes on a scientific basis how prolonged high levels of the stress hormone cortisol negatively affect the cardiovascular, nervous, immune, digestive, and endocrine systems. It also describes scientifically proven methods for reducing stress, psychological approaches, lifestyle strategies, and modern stress management techniques.

Relevance of the topic: The fast pace of modern life, increased workload, economic pressures, a sharp increase in information flow, and changes in social life are leading to increased stress. According to statistics, more than 70% of the world's population lives under constant stress. Prolonged stress disrupts all aspects of human health - physical, mental, and social well-being. High cortisol levels cause problems such as depression, hypertension, heart attack, decreased immunity, gastrointestinal diseases, and metabolic syndrome. Therefore, the study of chronic stress and the identification of practical ways to reduce it are very relevant today.

Purpose of the topic: The purpose of the article is to study in detail the mechanisms of the effect of chronic stress on the body at the molecular, physiological and psychological levels, to identify the clinical consequences of stress and to instill in the reader scientifically based methods for reducing it. It is also aimed to highlight methods that increase stress tolerance, psychological preventive measures and lifestyle changes.

Key words: Stress, cortisol, adrenaline, hypothalamic-pituitary-adrenal axis (HPA-axis), psychosomatics, depression, anxiety, immunity, hypertension, neurosis, mindfulness, meditation, autogenic exercises, psychohygiene.

Main part: Chronic stress is a violation of the body's adaptation process to long-term psychological or physical pressure, which over time causes serious damage to various systems. Every day, a person is exposed to small or large stresses, but if these stresses are short-term, the body can adapt to them. However, if the stress factor persists for a long time, the body's compensatory mechanisms break down and pathological conditions begin to form.

During stress, the hypothalamus is the first to be activated. It stimulates the release of adrenocorticotrophic hormone (ACTH). This hormone, in turn, affects the adrenal cortex, causing the release of cortisol. Although cortisol is necessary in the short term, its high level for a long time is very dangerous.

Chronic elevation of cortisol disrupts all systems of the body. First of all, it negatively affects the cardiovascular system. Constant stress increases blood pressure, accelerates the heartbeat, and hardens the walls of blood vessels. As a result, the risk of hypertension, coronary heart disease, and even myocardial infarction increases. Adrenaline released during stress narrows the vessels, which increases the heart's need for oxygen and provokes cardiological diseases.

Another important area of stress is its effect on the nervous system. With chronic stress, a person's nerve fibers work under tension, and the metabolism of noradrenaline and serotonin in the brain centers is disrupted. Over time, this causes problems such as depression, anxiety, neurosis, insomnia, irritability, and fatigue syndrome. Since the brain constantly processes stress, the hippocampus — the center responsible for memory — loses its function, learning ability weakens, and concentration decreases.

Stress also has a strong impact on the immune system. High cortisol levels weaken the activity of immune cells — lymphocytes, NK cells, and phagocytes. Therefore, against the background of chronic stress, a person is more susceptible to colds, viral infections, and bacterial diseases. Scientific studies even show that stress can affect the development of cancer, as the control function of the immune system decreases.

The digestive system is also one of the departments most affected by stress. Cortisol leads to an increase in gastric juice, which provokes gastritis and ulcers. Stress also disrupts intestinal peristalsis, resulting in symptoms such as diarrhea, constipation, flatulence, and abdominal pain. Against the background of chronic stress, irritable bowel syndrome (IBS) is becoming one of the most common diseases.

Stress disrupts the hormonal balance in the endocrine system. In women, the menstrual cycle is disrupted, the ability to conceive decreases, and testosterone levels in men drop. Stress is considered an important factor in the development of metabolic syndrome, insulin resistance, and type 2 diabetes.

Another important consequence of stress is psychosomatic diseases. Among these, migraines, hypertension, heart pain, skin diseases (psoriasis, atopic dermatitis), and an increase in bronchial asthma attacks are especially common. In this case, mental stress is manifested through physical symptoms. Therefore, stress reduction is necessary to protect all areas of the body's health. Methods for reducing stress are divided into several areas. First of all, psychological approaches - skills such as managing one's emotions, gently resolving conflicts, properly allocating time (time management), positive thinking, and self-support.

Breathing exercises, meditation, mindfulness (conscious awareness of the present moment), autogenic training, yoga, and progressive muscle relaxation techniques are some of the most effective ways to reduce stress. The 4/4/6 breathing technique, i.e., 4 seconds of deep breathing, 4 seconds of holding your breath, and 6 seconds of exhaling, calms the nervous system, normalizes the heart rate, and relaxes the body.

It is also important to improve your lifestyle. Regular physical activity — running, swimming, light exercise — reduces stress hormones and increases the production of endorphins. Normalizing sleep patterns, eating right, and reducing caffeine and sugar significantly reduce stress. Walking in nature, positive social relationships, and family communication increase stress tolerance.

If necessary, psychotherapy — cognitive-behavioral therapy, relaxation therapy, motivational interviews — and in some cases, medications (anxiolytics, antidepressants) can be used to control stress.

Conclusion: Chronic stress damages all systems of the body and leads to the deterioration of physical and mental health. Its negative effects on the heart, nervous system, immune system, digestive system and endocrine system have been scientifically proven. Reducing stress requires an integrated approach: developing psychological skills, forming a healthy lifestyle, meditation and breathing exercises, physical activity and quality sleep - all of these are important in eliminating stress. Stress control is one of the main conditions for human health and quality of life.

References:

1. Selye H. *The Stress of Life*.
2. McEwen B. *Stress and Allostatic Load*.
3. American Psychological Association (APA) — Stress Facts.
4. Sapolsky R. *Why Zebras Don't Get Ulcers*.
5. WHO. *Mental Health and Stress Management Guidelines*.
6. O'zbekiston Respublikasi SSV — Ruhiy salomatlik bo'yicha klinik tavsiyalar.
7. Schneiderman N. *Psychology and Stress Research*.