Diet and Stress

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KEYWORDS

• Diet • Stress • Nutrition • Supplementation • Vitamins • Minerals

KEY POINTS

- Nutrition, diet and stress.
- Stress and nutritional insufficiency.
- Nutrition for stress.

"Let food be your medicine and let medicine be your food."

—Hippocrates

INTRODUCTION

Stress in biological terms refers to the reaction of the body to the disturbance of the equilibrium given particular stimuli. A stressor can vary in intensity, and people have different levels of coping ability to respond well or fail to respond properly to an event that has occurred in their life, whether physical or emotional. Physiologic systems work in a complex and integrated manner. There are many factors of one's daily lifestyle that bring stress upon the body. Stress is a common problem in most modern societies, in which there are economic pressures; political, religious, and other social conflicts; overpopulation; contamination; and a food industry that provides main staple foods that are additional stressors (refined carbohydrates, excessive animal fats, artificial colors, preservatives, and sweeteners). Unhealthy eating patterns will only result in an increased level in stress, followed by further health problems in the near future if the issues are not resolved. With a healthy eating plan accompanied with scientific supplementation and a proper stress management program, one can overcome stress, prolong one's life span, and reduce the likelihood of stress-related illnesses.

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Abbreviations	
ANS	Autonomic nervous system
DHA	Docosahexaenoic acid
EPA	Eicosapentaenoic acid
PMS	Premenstrual syndrome

The US population in general as a whole is overstressed. It is well understood that stress and perceived stress in adults contribute to a wide range of disorders including hypertension and elevated plasma cortisol,[1] cardiac and cardiovascular disease,[2] inflammatory bowel syndrome,[3] type 2 diabetes mellitus,[4] and a reduced quality of life among those suffering with cancer.[5–7]

Stress happens in 3 stages. The first is an initial state of alarm (fight or flight response), which produces an increase of adrenaline. Living organisms can withstand occasional extreme stress and still survive. The second stage is a short-term resistance mechanism that the body sets up to cope with the problem. The final stage is a state of exhaustion. The exhaustion stage occurs when the body has used up all its available resources. If the situation is not taken care of, stress can produce long-term damage to the body, including heart problems, high blood pressure, the immune system problems (susceptibility to infections and allergies), skin problems (acne, itchy rashes, psoriasis, and eczema), pain (neck, shoulder and back), diabetes, and infertility.[8]

Stress affects the whole body is the following sections provide a brief description of how stress affects different body systems.

Musculoskeletal System

When muscles are tense for prolonged periods of time, other reactions of the body promote stress-related disorders. Tension headache and migraine headache have been associated with chronic muscle tension in the area of the shoulders, neck, and head.

Respiratory System

Stress can make breathing more difficult. For those with asthma or a chronic obstructive disease, getting enough oxygen can become difficult.

Cardiovascular

Repeated acute stress and persistent chronic stress can induce inflammation in the vasculature, especially of the coronary arteries. This is one of the proposed mechanisms associating stress to myocardial infarcts. It addition, it has been shown that the way a person responds to stress can alter cholesterol levels.

Endocrine

Stress affects how the hypothalamus signals the pituitary gland and the autonomic nervous system to secrete the stress hormones epinephrine and cortisol. The hypothalamus stimulates the adrenal glands cortex to produce cortisol and the adrenal medulla to produce epinephrine. This gives the body the energy to run from danger.

The Nervous System

Chronic stress can result in a long-term drain on the body. As the sympathetic nervous system continues to trigger physical reactions, it causes a wear and tear on the body.