

# Different Approaches to Manage Stress

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## Abstract

Stress is mental pressure which can be physical, emotional, social, etc. Stress means that you are not equipped to conduct the activity that you have taken up. During stress, external and internal activity of the human body is affected. It can be positive and negative. Positive stress is beneficial while negative stress causes dysfunction of various systems. Nowadays, stress is more common among children and young age groups. A lot of causes of stress are known and some are unknown. By understanding the causes of stress, we can cope up with stress and can live a good life. Stress triggers or aggravates many diseases and causes more complicated issues. During stress, a lot of changes occur in the human body like hormones, enzymes, muscle action, nerve response, etc. The aim of this paper is to manage stress using different approaches.

**Keywords:** Stress, Hormones, Emotional.

## Introduction

Any external or internal stimuli that alter the biological function of the body is known as stress. During stress, levels of adrenaline and cortisol increase. These hormones are known as stress hormones. There are two major systems that respond to stress:

1. Autonomic nervous system
2. Hypothalamic-pituitary-adrenal Axis

The Sympathoadrenal medullary (SAM) axis activates the fight-or-flight response while the parasympathetic nervous system returns the body to homeostasis. The hypothalamic-pituitary-adrenal (HPA) axis regulates the release of cortisol hormones, which affect most bodily functions like metabolism, immunology, psychology, and physiology.

There are two types of stress:

Acute stress

Chronic stress

Acute stresses occur suddenly and last for a few days. Many times acute stress can turn into chronic stress if it persists.

Chronic stress occurs over a period of time and lasts longer, or even for a lifetime. Generally, if stress lasts for more than one week, it is called chronic stress. Initially, the stress progresses slowly and damages the body severely.

## Causes of Stress

Causes of stress vary from person to person. Stress can arise from both positive challenges and negative ones. Most common causes of stress include:

- Financial problems
- Marriage or divorce

- Death of a spouse or family member
- Overthinking
- Serious illness
- Relationship problems
- Increased workload at the office
- Inability to manage time
- Feeling overwhelmed and isolated

### **Signs and Symptoms of Stress**

- Lack of confidence
- Irritability
- Insomnia
- Nervousness
- Worry
- Anxiety
- Depression
- Dark circles under the eyes
- Lack of concentration
- Weight gain or loss
- Excessive hair loss, etc

### **Effects of Stress on different system**

Stress can affect various systems of the body:

#### **Effect on Muscular System:**

Stress affects muscular contraction and relaxation. Energy for muscular contraction is obtained by the breakdown of adenosine triphosphate (ATP) into adenosine diphosphate (ADP) and inorganic phosphate (Pi). This energy is utilized for muscle contraction. During stress, ATP breakdown is affected, and the binding of calcium ions with troponin is also affected. Muscle relaxation occurs when calcium ions are pumped back into L-tubules. It causes a decrease in sarcoplasmic calcium content, leading to the release of calcium ions from troponin. This causes the detachment of myosin from actin, followed by muscle relaxation. However, during stressful conditions, calcium ions are not pumped back into L-tubules, which increases the level of sarcoplasmic calcium. So, energy is not obtained, thereby muscle relaxations are not occurring properly. This can result in musculoskeletal disorders.

#### **Effect on Endocrine System:**

During stress, the processes of glycogenolysis (breakdown of glycogen into glucose) and gluconeogenesis (formation of glucose from non-carbohydrates) are increased. This process results in an increased blood glucose level, making body tissues unable to use this excess blood glucose which increases the risk for diabetes. Stress affects the endocrine system by releasing hormones to speed up glucose production for energy. During stress, the endocrine system increases its production of steroid hormone cortisol. Cortisol causes the brain to shrink in size.

**Effect on Cardiovascular System:**

When stress lasts for a long time, it can result in increased heart rate, pulse rate, and high blood pressure. Sometimes, such prolonged stress can lead to a heart attack, a brain stroke, myocardial infarction, etc.

**Effect on Nervous System:**

During stress, sleep-inducing centres in the brain get affected. Two centers which induce sleep are located in the brainstem – the raphe nucleus and the locus coeruleus of the pons. Serotonin and Noradrenaline are released by these two centres. During stress, the levels of serotonin and Noradrenaline decrease. During stress, the size of the hippocampus decreases, thereby worsening memories.

**Effect on Respiratory System:**

Many studies have shown that stress can affect respiration. During respiration, the exchange of gases – Oxygen and Carbon dioxide occurs from alveoli to tissue and tissue to alveoli respectively. During stress, this process of respiration is affected, thereby causing difficulty in respiration.

**Management of Stress**

- Drink plenty of water and take hot baths
- Yoga and meditation
- Time management
- Ask for help if needed
- Being in good friend circle
- Spend time with family and friends
- Watching comedy movies, shows, etc.
- Engage yourself in your hobbies
- Share problems with your friends
- Walking fast
- Eat a healthy diet
- Prayer
- Manipulative therapy
- Acupressure
- Playing
- Positive thinking/prayer
- Stay away from negative people
- Maintain communication with family
- Take a hot foot bath before bedtime

**Review of Literature**

A comprehensive review of literature was conducted through a maximum number of research papers and publications. Brief snapshots of some are as follows:

- Dr. Deepthi Bhargara and Hemant Triveni (2018) in the International Journal of Management and Social Science studied the symptoms of stress, measured stress levels among the youth, and also identified strategies to cope with stress by the youth. They found that maintaining time management,

being up to date in coursework, engaging in various activities, talking with families, thinking positively, sharing problems with friends, etc., reduced stress.

- Quadir Bukhsh, Abid Shahzad, and Muzammil Nisha (2011) in *Procedia Social and Behavioral Science* studied the symptoms of stress, causes of stress, and stress management techniques used by students. They found that most students feel tired/fatigued during stress. The majority of students agreed that they feel muscle pain and lack concentration. They concluded that watching TV and movies reduces stress.

### **Conclusion**

Nowadays stress is considered a routine characteristic. Many people believe that stress always has a negative effect, but researchers have found that stress has both positive and negative effects. Stress is involved in preserving the homeostasis of species and strengthens us to face future challenges. If stress is severe and prolonged, it can cause many disorders. Stress can be treated using pharmacological methods (such as medications) and non-pharmacological methods like lifestyle changes, exercise, a healthy diet, etc.

### **Conflict of Interest**

Author declares that they have no conflict of interest in this study.

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