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Stress: The Silent Sickness

Neethu George

Abstract: From cramming for a test to arguing with a friend, individuals experience stress every day. While stress can be beneficial in certain situations, letting stress get out of control can lead to a variety of mental and physical health issues. This article examines the different types of stress, ways to cope with stress, and the overall effect of stress on human health.

Stress is a feeling all humans experience. Stress is seen “in terms of life events—as a stimulus—circumstances or events that require the person to adapt [and] produce feelings of tension.”¹ Stressors may range anywhere from major life events to daily tasks. In addition, stress can be classified as eustress or distress based on its connotation. It can also be categorized by its duration, such as short-term or long-term. While eustress and short-term stress can have positive effects such as enhancing motivation to increase productivity, long-term distress can be detrimental to health.² Negative effects of chronic stress may include cardiovascular disease, diabetes, and macroscopic changes in the brain.³ In response to undesired symptoms, there are a variety of methods to manage negative stress, from pharmacologic to nonpharmacologic treatment. Ultimately, learning to cope with negative stress can prevent the development of chronic stress and a host of other illnesses.

Frequently, when a person hears the word stress, they think of the negative form, which is referred to as distress. Prolonged distress can lead to chronic stress which may be detrimental to health. There are four major hormones associated with stress – epinephrine, norepinephrine, corticosteroids, and cortisol.⁴ These hormones often stimulate the central nervous system and play a positive role in eustress. However, during chronic stress, hormones may become detrimental. Epinephrine and norepinephrine are known as the “fight or flight” hormones which are released by the adrenal glands when a person faces stress.⁴ Ongoing stress can cause high levels of both hormones and may lead to conditions such as high blood pressure, obesity, or even tumors.⁴ Adversely, chronic stress can make an individual less sensitive to epinephrine and norepinephrine. As a result, the body starts producing less of these hormones and becomes susceptible to sleep disorders, migraines, and a variety of other medical conditions.⁴ When experiencing stress, corticosteroids stimulate the body to “release[s] fatty acids for energy, causing digestion to stop, blood sugar levels to rise, and the heart to pump more blood to the muscles.”⁵ Simultaneously, the pituitary gland releases cortisol. Cortisol helps divert energy to muscles and organs that are necessary to avoid danger. While this can be helpful for a short amount of time, long periods of stress can cause cortisol levels to remain elevated. One function of cortisol is to suppress the immune system. Therefore, extended periods of elevated cortisol levels can cause wounds to heal more slowly making the body prone to infections.⁵ Over time, this can lead to diseases such as diabetes, cardiovascular disease, and even chronic gastrointestinal problems.³ Moreover, chronic stress has also been linked to macroscopic changes in certain brain areas. These alterations may increase vulnerability to psychiatric disorders such as depression.⁶

In a 2014 study conducted by the American Psychological Association and the American Institute of Stress, the top 3 causes of stress in the United States were reported to be job pressure, financial problems, and health issues.² Keeping these stressors from developing into chronic stress can prevent a host of illnesses and improve health.

Positive stress, also known as eustress, can boost an individual’s motivation and encourage strong work ethic. In a 2013 study published in *Psychoneuroendocrinology*, researchers discovered that manageable levels of life stress may enhance resistance to oxidative damage, which has been linked to aging and age-related disease.⁷ One of the common causes of stress mentioned earlier was work and a common stressful scenario is procrastinating until a deadline approaches. However, when the deadline for a job nears, individuals tend to become more focused under pressure. Therefore, while an individual’s job may cause stress, short-term stress can certainly be beneficial. The stress associated with facing fears and problem solving increases an individual’s confidence in their ability to work through situations without practicing avoidance. For instance, public speaking may be daunting for some individuals, but by facing that fear, a person will most likely develop courage for future experiences.⁸ Therefore, even though stress has a negative connotation, small periods of eustress can actually be beneficial to a person’s overall health.

Stress can be managed in a variety of ways, both pharmacologically and non-pharmacologically. While there are no specific medications for stress, medications can be prescribed to manage signs or symptoms of stress. For instance, as mentioned earlier, stress can lead to depression, and as a result, doctors may prescribe antidepressants. The antidepressants are not prescribed to treat the stress itself but rather a symptom of stress.⁹ Additionally, there are many non-pharmacological methods to cope with stress. Exercise is an effective stress reducer and allows the body to release endorphins which improve mood and the immune system. In order to immediately reduce stress, slow breathing can be used. Taking deep breaths has shown to lower blood pressure, reduce muscle tension, and decrease heart rate.⁵ Even a person’s diet can impact how their body responds to stress. A balanced diet emphasizing all the major food groups can help the body respond to stress more efficiently. Studies found that those who consumed higher amounts of caffeine during stress had increased blood pressure levels.⁵ This suggests high caffeine intake may cause an

individual to experience greater amounts of stress and produce more stress hormones. Sleep also plays a key role in stress. Lack of sleep can make a person more susceptible to stress and simultaneously, stress can interfere with the ability to sleep. Finding a balance is key. It is recommended that adults sleep 8 to 9 hours a night.⁵ Another way to cope with stress is to express emotions. Finding a support system, whether it is family, friends, or even a professional can help alleviate stress.⁵

While eustress can increase motivation, long periods of negative stress can be detrimental to an individual's health. Harmful effects of chronic stress include cardiovascular diseases, diabetes, and brain alterations.³ In order to prevent these illnesses, it is important that individuals differentiate between the 2 types of stress and avoid the development of chronic stress. In addition, individuals should explore ways to cope with negative stress such as maintaining a healthy diet and establishing a support system.⁵ Although eustress may have positive short-term effects, prevention of chronic stress is essential for securing a healthy future.

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