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## Stress- Its Causes and Remedies

Yuvraj Arora\*

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“Happiness is a choice. You can choose to be happy. There is going to be stress in life, but it’s your choice whether you let it affect you or not.”

—Valerie Bertinelli

### Introduction

The term **stress** emerged in the literature from Latin word “**stringer**” that Refers to hardship, strains, adversity or affliction, in the 18th and 19th century. It was Hans Selye (1936) who introduced the concept of stress in life science. Psychologists are of view that it is imperative to maintain the optimum level of stress for success, achievement, higher productivity, effectiveness in every walk of life, growth and development.

We generally use the word “**STRESS**” when we feel that everything seems to have become too much-we are overloaded and wonder whether we really can cope with the pressure placed upon us. Anything that poses a challenge a threat to our well-being is a stress. However, when the stresses undermine both our mental and physical health, they are bad. Stress is your body’s way of responding to any kind of demand or threat. When you feel threatened, your nervous system responds by releasing a flood of stress hormones, including adrenaline and cortisol, which rouse the body for emergency action. Your heart pounds faster, muscles tighten, blood pressure rises, breath quickens, and your senses become sharper. These physical changes increase your strength and stamina, speed your reaction time, and enhance your focus.

According to Manktelow (2003) Stress, a universal phenomenon is considered to be a condition in which people respond physiologically, psychologically, behaviorally and socially to life changes. These changes may be occurring through family of related experiences, pathways, education, and outcomes caused by a range of different events or circumstances.

### A Brief History of Stress

A key to the understanding of the negative aspects of stress is the concept of *milieu interieur* (the internal environment of the body), which was first advanced by the French physiologist Claude Bernard. In this concept, he described the principles of dynamic equilibrium. In dynamic equilibrium, constancy, a steady state (situation) in the internal bodily environment, is essential to

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\* Student of M.A. (final) History, Department of Distance Education, Punjabi University, Patiala. Email: arorayuvraj91@gmail.com

survival. Therefore, external changes in the environment or external forces that change the internal balance must be reacted to and compensated for if the organism is to survive. Examples of such external forces include temperature, oxygen concentration in the air, the expenditure of energy, and the presence of predators. In addition, diseases are also stressors that threaten the constancy of the *milieu interieur*.

The neurologist Walter Cannon coined the term *homeostasis* to further define the dynamic equilibrium that Bernard had described. He also was the first credited with recognizing that stressors could be emotional, as well as physical. Through his experiments, he demonstrated the “fight or flight” response that man and other animals share when threatened. Further, Cannon traced these reactions to the release of powerful neurotransmitters from a part of the adrenal gland, the medulla. (Neurotransmitters are the body’s chemicals that carry messages to and from the nerves.) The adrenal medulla secretes two neurotransmitters, epinephrine (also called adrenaline) and norepinephrine (noradrenaline), in the response to stress. The release of these neurotransmitters leads to the physiologic effects seen in the fight or flight response, for example, a rapid heart rate, and increased alertness.

Hans Selye, another early scientist who is known for his studies of stress, extended Cannon’s observations. He included the pituitary gland, a small gland at the base of the brain, as part of the body’s stress response system. He described how this gland controls the secretion of hormones (for example, cortisol) that are important in the physiological response to stress. Additionally, Selye actually introduced the term stress from physics and engineering and defined it as “mutual actions of forces that take place across any section of the body, physical or psychological.”

In his experiments, Selye induced stress in rats in a variety of ways. He found typical and constant psychological and physical responses to the adverse situations that were imposed on the rats. In rats exposed to constant stress, he observed enlargement of the adrenal glands, gastrointestinal ulcers, and a wasting away (atrophy) of the immune (defense) system. He called these responses to stress the general adaptation (adjustment) or stress syndrome. He discovered that these processes, which were adaptive (healthy, appropriate adjustment) and normal for the organism in warding off stress, could become much like illnesses. That is, the adaptive processes, if they were excessive, could damage the body. This observation, then, was the beginning of an understanding of why stress, really overstress, can be harmful, and why the word stress has earned such a bad name.

### **How do you respond to stress?**

The latest research into the brain shows that we, as mammals, have three ways of regulating our nervous systems and responding to stress:

- **Social engagement** is our most evolved strategy for keeping ourselves feeling calm and safe. Since the vagus nerve connects the brain to sensory receptors in the ear, eye, face and heart, socially interacting with another person—making eye contact, listening in an attentive way, feeling understood—can calm you down and put the brakes on defensive responses like “fight-or-flight.” When using social engagement, you can think and feel clearly, and body functions such as blood pressure, heartbeat, digestion, and the immune system continue to work uninterrupted.

- **Mobilization**, otherwise known as the fight-or-flight response. When social engagement isn't an appropriate response and we need (or *think* we need) to either defend ourselves or run away from danger, the body prepares for mobilization. It releases chemicals to provide the energy you need to protect yourself. At the same time, body functions not needed for fight or flight—such as the digestive and immune systems—stop working. Once the danger has passed, your nervous system calms the body, slowing heart rate, lowering blood pressure, and winding back down to its normal balance.
- **Immobilization**. This is the least evolved response to stress and used by the body only when social engagement and mobilization have failed. You may find yourself traumatized or “stuck” in an angry, panic-stricken or otherwise dysfunctional state, unable to move on. In extreme, life-threatening situations, you may even lose consciousness, enabling you to survive high levels of physical pain. However, until you're able to arouse your body to a mobilization response, your nervous system may be unable to return to its pre-stress state of balance.
- While it's not always possible to respond to stress using social engagement, many of us have become conditioned to responding to every minor stressor by immediately resorting to fight or flight. Since this response interrupts other body functions and clouds judgment and feeling, over time it can cause stress overload and have a detrimental effect on both your physical and mental health.

### Types of STRESS

The types of stress are as follows

- a) Acute Stress
  - b) Chronic Stress
- a) **Acute Stress:** Acute stress is the most common form of stress among human worldwide. Acute stress deals with the pressures of the near future or dealing with the very recent past. This type of stress is often misinterpreted for being a negative connotation. While this is the case in some circumstances, it is also a good thing to have some acute stress good in life. Running or any other form of exercise is considered acute stressors. Some experiences such as riding a roller coaster is an acute stress but is usually very fun. Acute stress is a short term stress and in result does not have enough time to do the damage that long term stress causes.
  - b) **Chronic Stress:** It is unlike acute stress. It has a wearing effect on people that can become a very serious health risk if it continuous over a long period of time. Chronic stress can lead to memory loss, damage special recognition and produces a decreased drive of eating. The severity varies from person to person and also sex difference can be an underlying factor. Women are able to take longer durations of stress than men without showing the same maladaptive changes. Men can deal with the shorter stress duration better than women can but once males hit a certain threshold, the chances of them developing mental issues increases drastically.

### Causes of Stress

The general causes of stress are as follows:

- Financial matters
- Driving in bad traffic
- Bereavement
- Fear of crime
- Family problems
- Losing your job
- Illness
- Miscarriage
- Job issues
- Noisy neighbors
- Lack of time
- Overcrowding
- Moving home
- Pollution
- Relationship (Including divorce)
- Pregnancy
- Abortion
- Retirement
- Becoming a mother or father
- Too much noise
- Conflict in the workplace
- Uncertainly (awaiting laboratory test results, academic exam results, job interview results etc.)

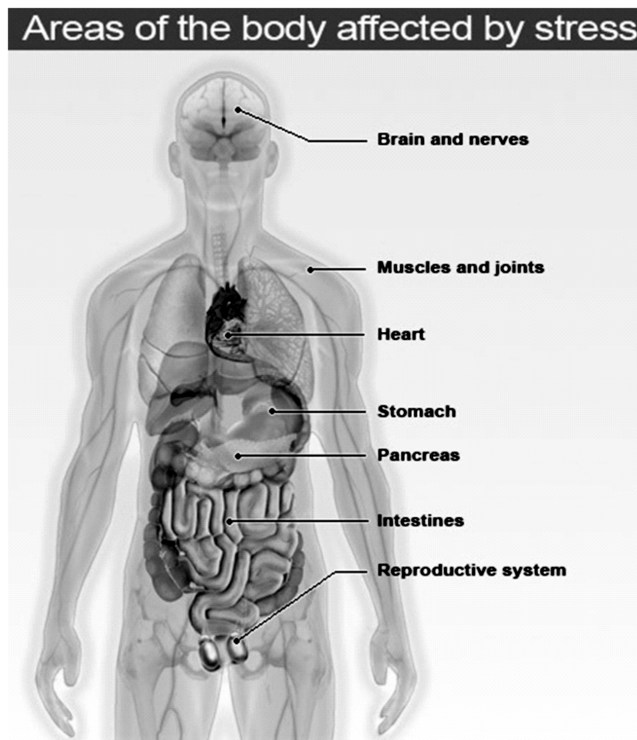
### STRESS-Fight or Flight responses

The way you respond to a challenge may also be a type of stress. Part of your response to a challenge is physiological and affects your physical state. When faced with a challenge or a threat, your body activates resources to protect you – to either get away as fast as you can or flight.

Our fight or flight response is our body's sympathetic nervous system reacting to a stressful event. Our body produces larger quantities of the chemicals like cortisol, adrenaline, nor adrenaline which triggers a higher heart rate, heightened muscle preparedness, sweating and alertness-all these factors help us protect ourselves in a dangerous or challenging situation. When we are stressed the following happens:

- Blood pressure rises
- *Breathing become more rapid*
- Digestive system slows down
- Heart rate rises
- Immune system goes down

- Muscles become tense
- We don't sleep
- A tendency to sweat
- Back pain
- Chest pain
- Muscle spasms
- Erectile dysfunction
- Headache
- Heart Disease
- Hypertension (High Blood pressure)
- Loss of libido
- Nail biting
- Muscular aches
- Sleeping difficulties
- Stomach upset



**Possible effects of stress on your thought and feelings**

- Anger
- Anxiety
- Depression

- Feeling of insecurity
- Forgetfulness
- Irritability
- Problem concentration
- Sadness
- Restlessness
- Fatigue

#### **Possible effects of stress on your behavior**

- Eating too much
- Frequent crying
- Eating too little
- Drug abuse
- Sudden angry outbursts
- Social withdrawal
- Alcohol abuse
- Higher tobacco consumption
- Relationship problem

#### **Measuring Stress**

Level of stress can be measured. One way is through the use of psychological testing: THE HOLMES and RAHE STRESS scale is used to rate stressful life events while the DASS contains a scale for stress based on self-report items. Changes in blood-pressure and Galvanic Skin Response (GSR) can also be measured to test stress levels, the changes in stress levels. A digital thermometer can be used to evaluate changes in skin temperature which can indicate activation of the fight or flight response drawing blood away from the extremities. Cortisol is the main hormone released during a stress response and measuring cortisol from hair will give a 60-90 day baseline stress level of an individual. The method of measuring stress is currently the most popular method in the clinic.

#### **How to Deal with Stress**

There are three broad methods you can follow to treat stress, they include self-help, self-management and medication.

#### **Self-help for Treating Stress**

The methods of self-help for treating stress are as follows:

- **Exercise:** Exercise has been proven to have a beneficial effect on a person's mental and physical state. For many people exercise is an extremely effective stress buster.
- **Division of labor:** Try to delegate your responsibilities at work, or share them.
- **Assertiveness:** Don't say "YES" to everything. If you can't do something well or if something is not your responsibility, try to seek ways of not agreeing to do them.
- **Alcohol and drugs:** Alcohol and drugs will not help you manage your stress better. Either stop consuming them completely or cut down.

- **Caffeine:** If your consumption of coffee and other drinks which contain caffeine is high, cut down.
- **Nutrition:** Eat plenty of fruits and vegetables. Make sure you have a healthy and balanced diet.
- **Time:** Make sure you set aside sometime each day just for yourself. Use that time to organize your life, relax and pursue your own interest.
- **Breathing:** There are some effective breathing techniques which will slow down your system and help you relax.
- **Talk:** Talk to your family, friends, work colleagues and your boss. Explore your thoughts and worries.
- **Seek professional help:** If the stress is affecting the way you function; go and see your doctor; heightened stress for prolonged periods can be bad for your physical and mental health.
- **Relaxation techniques:** Meditation, massage and Yoga have been known to greatly help people with stress.

### Stress Management Techniques

Stress management techniques can help you to remove or change the sources of stress; alter the way you view a stressful event, lower the impact that stress might have on your body and teach you alternative ways of coping. Stress management therapy will have the objective of pursuing one or more of these approaches. Stress management techniques can be gained if you read self-help books or attend a stress management course. You can also seek the help of a counselor or psychotherapist for personal development or therapy sessions. Many therapies which help you relax such as aroma therapy or reflexology may have a beneficial effect.

### Medicines

Doctors will not usually prescribe medications for coping with stress, unless the patient has an underlying illness, such as depression or some type of anxiety. If that is the case, the doctor is actually treating a mental illness. In such cases, an antidepressant may be prescribed. Bear in mind that there is risk that all the medications will do is mask the stress rather than help you deal and cope with it.

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