

## 1. Details of Module and its structure

Module Detail	
Subject Name	Psychology
Course Name	Psychology 03 (Class XII, Semester - 1)
Module Name/Title	Effects of Stress and Coping with stress - Part 2
Module Id	lepy_10302
Pre-requisites	Knowing about nature of stress, sources and types of stress
Objectives	After going through this lesson, the learners will be able to understand the following: <ul style="list-style-type: none"><li>To understand the effects of stress and know ways of coping with stress</li></ul>
Keywords	Alarm reaction, Appraisal, Coping, Exhaustion, General adaptation syndrome, Task-oriented strategy, Emotion-oriented strategy, Avoidance-oriented strategy, Relaxation, Meditation, Creative visualization

## 2. Development Team

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## Table of Contents :

1. Effects of Stress
2. Stress and Health
3. Stress and the Immune System
4. Stress and Lifestyle
5. Coping with Stress



Source: <http://maxpixel.freegreatpicture.com/static/photo/1x/Fire-Stress-Head-Burn-Face-Voltage-Old-Flame-1597572.jpg>

### Effects of Stress

What are the effects of stress?

Many of the effects are physiological in nature, however, other changes also occur inside stressed individuals. There are four major effects of stress associated with the stressed state, viz. emotional, physiological, cognitive, and behavioral.

**Emotional Effects** : Those who suffer from stress are far more likely to experience mood swings, and show erratic behaviour that may alienate them from family and friends. In some cases this can start a vicious circle of decreasing confidence, leading to more serious emotional problems. Some examples are feelings of anxiety and depression, increased physical tension, increased psychological tension and mood swings. The Box below presents the phenomenon of ‘Examination Anxiety’.

#### Examination Anxiety



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Examination anxiety is a fairly common phenomenon that involves feelings of tension or uneasiness that occur before, during, or after an examination. Many people experience feelings of anxiety around examinations and find it helpful in some ways, as it can be motivating and create the pressure that is needed to stay focused on one's performance. Examination nerves, worry, or fear of failure are normal for even the most talented student. However, stress of formal examination results in such high degrees of anxiety in some students that they are unable to perform at a level which matches the potential they have shown in less stressful classroom situations.

Examination stress has been characterised as “evaluative apprehension” or “evaluative stress” and produces debilitating behavioural, cognitive, and physiological effects no different from those produced by any other stressor. High stress can interfere with the student's preparation, concentration, and performance. Examination stress can cause test anxiety which adversely affects test performance. Persons who are high in test anxiety tend to perceive evaluative situations as personally threatening; in test situations, they are often tense, apprehensive, nervous, and emotionally aroused.

Moreover, the negative self-centred cognitions which they experience distract their attention and interfere with concentration during examinations. High test anxious students respond to examination stress with intense emotional reactions, negative thoughts about themselves, feelings of inadequacy, helplessness, and loss of status and esteem that impair their performance. Generally, the high test anxious person instead of plunging into a task plunges inward, that is, either neglects or misinterprets informational cues that may be readily available to her/him, or experiences attentional blocks. While preparing for examinations, one must spend enough time for study, overview and weigh one's strengths and weaknesses, discuss difficulties with teachers and classmates, plan a revision timetable, condense notes, space out revision periods, and most importantly on the examination day concentrate on staying calm.

**Physiological Effects :** When the human body is placed under physical or psychological stress, it increases the production of certain hormones, such as adrenaline and cortisol. These hormones produce marked changes in heart rate, blood pressure levels, metabolism and physical activity. Although, this physical reaction will help us to function more effectively when we are under pressure for short periods of time, it can be extremely damaging to the body in the long-term effects. Examples of physiological effects are release of epinephrine and norepinephrine, slowing down of the digestive system, expansion of air passages in the lungs, increased heart rate, and constriction of blood vessels.



Source:<http://www.publicdomainpictures.net/pictures/130000/velka/business-stress.jpg>

**Cognitive Effects :** If pressures due to stress continue, one may suffer from mental overload. This suffering from high level of stress can rapidly cause individuals to lose their ability to make sound decisions. Faulty decisions made at home, in career, or at workplace may lead to arguments, failure, financial loss or even loss of job. Cognitive effects of stress are poor concentration, and reduced short term memory capacity.



Source:<https://pxhere.com/en/photo/1132430>

**Behavioural Effects :** Stress affects our behaviour in the form of eating less nutritional food, increasing intake of stimulants such as caffeine, excessive consumption of cigarettes, alcohol and other drugs such as tranquillizers etc. Tranquillizers can be addictive and have side effects such as loss of concentration, poor coordination, and dizziness. Some of the typical behavioural effects of stress seen are disrupted sleep patterns, increased absenteeism, and reduced work performance.

### **Stress and Health**

You must have often observed that many of your friends (may be including yourself as well!) fall unwell during the examination time. They suffer from stomach upsets, body aches, nausea, diarrhea and fever etc. You must have also noticed that people who are unhappy in their personal lives fall sick more often than those who are happy and enjoy life. Chronic daily stress

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can divert an individual's attention from caring for herself or himself. When stress is prolonged, it affects physical health and impairs psychological functioning. People experience exhaustion and attitudinal problems when the stress due to demands from the environment and constraints are too high and little support is available from family and friends. The **physical exhaustion** is seen in the signs of chronic fatigue, weakness and low energy. The **mental exhaustion** appears in the form of irritability, anxiety, feelings of helplessness and hopelessness. This state of physical, emotional and psychological exhaustion is known as **burnout**. There is also convincing evidence to show that stress can produce changes in the immune system and increase the chances of someone becoming ill. Stress has been implicated in the development of cardiovascular disorders, high blood pressure, as well as psychosomatic disorders including ulcers, asthma, allergies and headaches. Researchers estimate that stress plays an important role in fifty to seventy per cent of all physical illnesses. Studies also reveal that sixty per cent of medical visits are primarily for stress related symptoms.

### **General Adaptation Syndrome**

What happens to the body when stress is prolonged? Hans Selye studied this issue by subjecting animals to a variety of stressors such as high temperature, X-rays and insulin injections, in the laboratory over a long period of time. He also observed patients with various injuries and illnesses in hospitals. Selye noticed a similar pattern of bodily response in all of them. He called this pattern the General Adaptation Syndrome (GAS). According to him, GAS involves three stages: alarm reaction, resistance, and exhaustion.

1. Alarm reaction stage : The presence of a noxious stimulus or stressor leads to activation of the adrenal pituitary-cortex system. This triggers the release of hormones producing the stress response. Now the individual is ready for fight or flight.. The person is either ready to fight with the situation or run away from the situation.

2. Resistance stage : If stress is prolonged, the resistance stage begins. The parasympathetic nervous system calls for more cautious use of the body's resources. The organism makes efforts to cope with the threat, as through confrontation. Both mind and body are still fighting or dealing with the stressful situation.

3. Exhaustion stage : Continued exposure to the same stressor or additional stressors drains the body of its resources and leads to the third stage of exhaustion. The physiological systems involved in alarm reaction and resistance become ineffective and susceptibility to stress-related

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diseases such as high blood pressure becomes more likely. The person now feels tired and fatigue starts to set in.

#### Evaluation of GAS- Model

Selye's model has been criticized for assigning a very limited role to psychological factors in stress. Researchers have reported that the psychological appraisal of events is important for the determination of stress. How people respond to stress is substantially influenced by their perceptions, personalities and biological constitutions.

### **Stress and the Immune System**

Stress can cause illness by impairing the workings of the immune system. The immune system guards the body against attackers, both from within and outside. Psychoneuroimmunology (psychological + neurological+ immune system) focuses on the links between the mind, the brain and the immune system. It studies the effects of stress on the immune system.

How does the immune system work? The white blood cells (leucocytes) within the immune system identify and destroy foreign bodies (antigens) such as viruses. It also leads to the production of antibodies. There are several kinds of white blood cells or leucocytes within the immune system, including T cells, B cells and natural killer cells.

- i. T cells destroy invaders, and T-helper cells increase immunological activity. It is these T-helper cells that are attacked by the Human Immuno Deficiency Virus (HIV), the virus causing Acquired Immuno Deficiency Syndrome (AIDS).
- ii. B cells produce antibodies.
- iii. Natural killer cells are involved in the fight against both viruses and tumours. Stress can affect natural killer cell cytotoxicity, which is of major importance in the defence against various infections and cancer. Reduced levels of natural killer cell cytotoxicity have been found in people who are highly stressed, including students facing important examinations, bereaved persons, and those who are severely depressed.

Studies reveal that immune functioning is better in individuals receiving social support. Also, changes in the immune system will have more effect on health among those whose immune systems are already weakened.

Psychological stress is accompanied by negative emotions and associated behaviours, including depression, hostility, anger and aggression. Negative emotion states are of particular concern to the study of effects of stress on health. The incidence of psychological disorders, such as panic attacks and obsessive behaviour increases with the build up of long-term stress. Worries can reach such a level that they surface as a frightening, painful physical sensation, which can be

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mistaken for a heart attack. People under prolonged stress are more prone to irrational fears, mood swings and phobias, and may experience fits of depression, anger and irritability. These negative emotions appear to be related to the function of the immune system. Our ability to interpret our world and to invest that interpretation with personal meaning and emotion have a powerful and direct effect on the body. Negative moods have been associated with poorer health outcomes. Feelings of hopelessness are related to worsening of disease, increased risk of injury and death due to various causes.

The Figure below depicts the sequence comprising negative emotions, release of stress hormones which lead to weakening of the immune system, thereby affecting mental and physical health.



Source:[https://cdn.pixabay.com/photo/2015/12/22/08/06/face-1103708\\_960\\_720.jpg](https://cdn.pixabay.com/photo/2015/12/22/08/06/face-1103708_960_720.jpg)

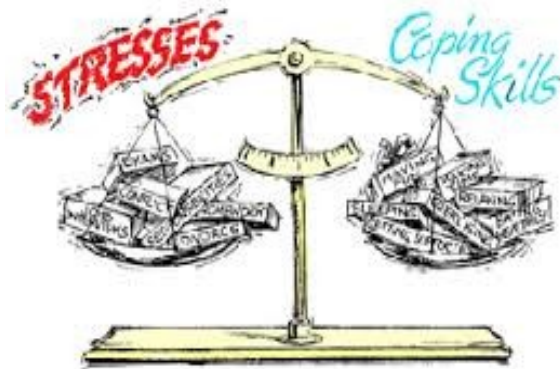
## **Lifestyle**

Stress can lead to unhealthy lifestyle or health damaging behaviour. Lifestyle is the overall pattern of decisions and behaviours that determine a person's health and quality of life. Stressed individuals may be more likely to expose themselves to pathogens, which are agents causing physical illness. People who are stressed have poor nutritional habits, sleep less and are likely to engage in other health risking behaviours like smoking and alcohol abuse. Such health impairing behaviours develop gradually and are accompanied by pleasant experiences temporarily.

However, we tend to ignore their long-term damaging effects and underestimate the risk they pose to our lives. Studies have revealed that health promoting behaviour like balanced diet, regular exercise, family support, etc. play an important role in good health. Adhering to a lifestyle that includes balanced low fat diet, regular exercise and continued activity along with positive thinking enhances health and longevity. The modern lifestyle of excesses in eating,

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drinking and the so called fast-paced good life has led to violation of basic principles of health in some of us, as to what we eat, think or do with our lives.



Source:<https://upload.wikimedia.org/wikipedia/commons/d/d6/Stress.gif>

### **Coping with Stress**

In recent years the conviction has grown that it is how we cope with stress and not the stress one experiences that influences our psychological well-being, social functioning and health. Coping is a dynamic situation-specific reaction to stress. It is a set of concrete responses to stressful situations or events that are intended to resolve the problem and reduce stress. The way we cope with stress often depends on rigid deep-seated beliefs, based on experience, e.g. when caught in a traffic jam we feel angry, because we believe that the traffic 'should' move faster. To manage stress we often need to reassess the way we think and learn coping strategies. People who cope poorly with stress have an impaired immune response and diminished activity of natural killer cells. Individuals show consistent individual differences in the coping strategies they use to handle stressful situations. These can include both overt and covert activities.

The three coping strategies given by Endler and Parker are:

Task-oriented Strategy : This involves obtaining information about the stressful situation and about alternative courses of action and their probable outcome; it also involves deciding priorities and acting so as to deal directly with the stressful situation. For example, schedule my time better, or think about how I have solved similar problems.





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**Emotion-oriented Strategy:** This can involve efforts to maintain hope and to control one's emotions; it can also involve venting feelings of anger and frustration, or deciding that nothing can be done to change things. For example, tell myself that it is not really happening to me, or worry about what I am going to do.

**Avoidance-oriented Strategy :** This involves denying or minimising the seriousness of the situation; it also involves conscious suppression of stressful thoughts and their replacement by self protective thoughts. Examples of this are watching TV, phone up a friend, or try to be with other people.

Lazarus and Folkman has conceptualised coping as a dynamic process rather than an individual trait. Coping refers to constantly changing cognitive and behavioural efforts to master, reduce or tolerate the internal or external demands that are created by the stressful transaction. Coping serves to allow the individual to manage or alter a problem and regulate the emotional response to that problem.

According to them, coping responses can be divided into two types of responses, problem-focused and emotion focused. Problem-focused strategies attack the problem itself, with behaviours designed to gain information, to alter the event, and to alter belief and commitments. They increase the person's awareness, level of knowledge, and range of behavioural and cognitive coping options. They can act to reduce the threat value of the event. For example "I made a plan of action and followed it". Emotion-focused strategies call for psychological changes designed primarily to limit the degree of emotional disruption caused by an event, with minimal effort to alter the event itself. For example "I did some things to let it out of my system". While both problem-focused and emotion-focused coping are necessary when facing stressful situations, research suggests that people generally tend to use the former more often than the latter.



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### **Stress Management Techniques**

Stress is a silent killer. It is estimated to play a significant role in physical illness and disease. Hypertension, heart disease, ulcers, diabetes and even cancer are linked to stress. Due to lifestyle manage stress. Some of these techniques are:



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**Relaxation Techniques :** It is an active skill that reduces symptoms of stress and decreases the incidence of illnesses such as high blood pressure and heart disease. Usually relaxation starts from the lower part of the body and progresses up to the facial muscles in such a way that the whole body is relaxed. Deep breathing is used along with muscle relaxation to calm the mind and relax the body.

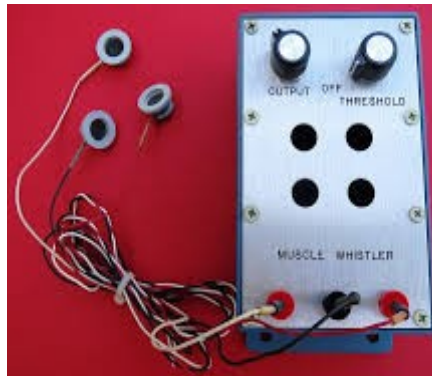


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**Meditation Procedures :** The yogic method of meditation consists of a sequence of learned techniques for refocusing of attention that brings about an altered state of consciousness. It involves such a thorough concentration that the meditator becomes unaware of any outside stimulation and reaches a different state of consciousness.

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**Biofeedback** : It is a procedure to monitor and reduce the physiological aspects of stress by providing feedback about current physiological activity and is often accompanied by relaxation training. Stress is on the increase. Therefore, schools, other institutions, offices and communities are concerned about knowing techniques to combat it. Biofeedback training involves three stages : developing an awareness of the particular physiological response, e.g. heart rate, learning ways of controlling that physiological response in quiet conditions; and transferring that control into the conditions of everyday life.



Source:[https://upload.wikimedia.org/wikipedia/commons/4/4d/Muscle Whistler with EMG surface electrodes %281971%29.jpg](https://upload.wikimedia.org/wikipedia/commons/4/4d/Muscle_Whistler_with_EMG_surface_electrodes_%281971%29.jpg)

**Creative Visualisation** : It is an effective technique for dealing with stress. Creative visualisation is a subjective experience that uses imagery and imagination. Before visualising one must set oneself a realistic goal, as it helps build confidence. It is easier to visualise if one's mind is quiet, body relaxed and eyes are closed. This reduces the risk of interference from unbidden thoughts and provides the creative energy needed for turning an imagined scene into reality

**Cognitive Behavioural Techniques** : These techniques aim to inoculate people against stress. Stress inoculation training is one effective method developed by Meichenbaum. The essence of this approach is to replace negative and irrational thoughts with positive and rational ones. There are three main phases in this : a) assessment b) stress reduction techniques c) application and followthrough. Assessment involves discussing the nature of the problem and seeing it from the viewpoint of the person/client. Stress reduction involves learning the techniques of reducing stress such as relaxation and self-instruction.

**Exercise** : Exercise can provide an active outlet for the physiological arousal experienced in response to stress. Regular exercise improves the efficiency of the heart, enhances the function of the lungs, maintains good circulation, lowers blood pressure, reduces fat in the blood and

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improves the body's immune system. Swimming, walking, running, cycling, skipping, etc. help to reduce stress. One must practice these exercises at least four times a week for 30 minutes at a time. Each session must have a warm-up, exercise and cool down phases.



Source:[https://upload.wikimedia.org/wikipedia/commons/5/50/FDBs\\_madpyramide\\_2011.jpg](https://upload.wikimedia.org/wikipedia/commons/5/50/FDBs_madpyramide_2011.jpg)

**Balanced Diet:** The body needs the right amount of foods and nutrients to keep healthy and fit. The food we eat helps our body to do its daily activities without suffering from undue discomfort. Anything that hampers the body from performing well is caused by many factors but the one which affects it most is stress. It can be construed that a good balanced diet would be able to prevent stress from setting in.

A balanced diet has **carbohydrates, proteins, minerals, fats and vitamins** that are sourced out from the food we eat. The vegetables are preferably eaten fresh like in salads to maintain the nutrients and vitamins in them. You can steam, blanch but don't overcook your vegetables to preserve the nutrients.. Include plenty of water in your diet to keep you hydrated and to wash out toxins from your body. You must also avoid too many sweets, starches, oily fats and trans fats. Try to maintain a low salt diet as well. Eat only when you are hungry or spread out your meals into 5-6 small portions to keep you full throughout the day. Eat more fiber by eating more fruits and include your vitamin supplements in your diet, too. A balanced diet is a key factor to reduce stress. If your body is contented and has the right nutrients to function well then you are likely to overcome stress.



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### **Making realistic goals**

This would help you do your work better. Try to carefully plan and focus on your goals. Make a 'to do' list to keep track of your activities and this will help prioritize things that you have to do. Short term and long term goals both are equally important for minimizing the stress levels.

**Sleep** A good night's sleep makes you able to tackle the day's stress more easily. When you are tired, you are less patient and more easily agitated, which can increase stress. Most adults need 7-9 hours of sleep per night. Practising good sleep hygiene along with stress-lowering tactics can help improve your quality of sleep.



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