



Stress

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Stress

(Psychological stress)

- Stress is a reaction to a stimulus that disturbs physical or mental equilibrium.
- A stressful event can trigger the “fight-or-flight” response, causing hormones such as adrenalin and cortisol to surge through the body.
- A little bit of stress, known as “acute stress,” can be exciting—it keeps us active and alert.
- Long-term, or “chronic stress,” can have detrimental effects on health.

Stress

- In medical terms:

Stress is the disruption of homeostasis through physical or psychological stimuli.

- Selye Definition:

Body's physiological response to psychological and physical demands (stressors)

Stressors

A Stressor is a stimulus or event that provokes a stress response in an organism.

- Stressors can be categorized as:

➤ Acute	X	Chronic
➤ External	X	Internal
➤ Unpleasant (<i>Distress</i>)	X	Pleasant (<i>Eustress</i>)
➤ Physical	X	Emotional (<i>Psychological; Mental</i>)

Common factors of stress (stressors)

Both negative and positive stressors can lead to stress:

- **Sensory:** pain, bright light
- **Life events:** birth and deaths, marriage, and divorce
- **Responsibilities:** lack of money, unemployment
- **Work/study:** exams, project deadlines
- **Personal relationships:** conflict, deception
- **Lifestyle:** heavy drinking, insufficient sleep
- **Early life exposure** (e.g. child abuse)
- **Lack of control over environmental circumstances**, such as food, housing, health, freedom, or mobility.

Psychological Distress

Results from three types of experience:

1. Pressure
2. Conflict
3. Frustration

Special Stressful Events

- **Serious Physical Illness**
- **Terminal Illness**
- **Bereavement**

Components of the Stress Response

1. Emotional (Fear, Anxiety and Depression) accompanied by somatic changes

2. Psychological to reduce the potential impact of the experience:

- ✓ **Impaired recall and numbness**
- ✓ **Coping strategies**
- ✓ **Defense Mechanisms**

Coping Strategies

1. Adaptive:

- Avoidance
- Working through problems
- Coming to terms with situations

2. Maladaptive:

- Substance abuse
- Histrionic or aggressive behavior
- Deliberate self-harm

3. Culturally determined

General adaptation syndrome (GAS)

A term used by Selye to describe the body's short-term and long-term reactions to stress.

❖ GAS involved two major systems of the body:

➤ the nervous system

➤ the endocrine (or hormonal) system.

❖ Three distinctive stages:

➤ Alarm reaction

➤ Resistance

➤ Exhaustion

Stage 1: Alarm reaction

❖ is the immediate reaction to a stressor.

"fight or flight" response, which prepares the body for physical activity.

❖ *However, this initial response can also decrease the effectiveness of the immune system, making persons more susceptible to illness during this phase.*

Stage 2: Resistance (stage of adaptation)

- ❖ During this phase, the body adapts to the stressors
- ❖ Changes at many levels take place in order to reduce the effect of the stressor.

For example, if the stressor is starvation, the person might experience a reduced desire for physical activity to conserve energy, and the absorption of nutrients from food might be maximized.

Stage 3: Exhaustion

When stress continued for some time:

- **The body's resistance to the stress may gradually be reduced .**
- **The immune system, and the body's ability to resist disease, may be almost totally eliminated.**
- **Patients may develop heart attacks or severe infection due to their reduced immunity.**

Neuro-chemistry and Physiology of GAS

- Stress activates the sympathetic branch of the ANS and releases stress hormones (epinephrine, and cortisol).
- Sympathetic output produces the fight-or-flight response, causing the body to divert blood flow to large muscles as the body prepares to run away from or fight something.

Less blood flows to the digestive system and other organs, producing dry mouth, motor agitation, sweating, pallor, enlarged pupils and, insomnia.

- Stressors can cause continual sympathetic activation with very little opportunity for the parasympathetic to activate.

Neuro-chemistry and Physiology of GAS

- **parasympathetic activation allows:**
 - **the bowel and other non-muscle organs receive good blood-flow.**
 - **the pupils constrict,**
 - **the glands secrete various compounds.**
- **Absence parasympathetic activation leads to:**
 - **poor digestion**
 - **poor healing**
 - **poor organ function.**

Neuro-chemistry and Physiology of GAS

- ❖ The body reacts to stress first by releasing the:
 - catecholamine hormones (epinephrine and norepinephrine)
 - glucocorticoid hormones (cortisol)
- ❖ The hypothalamic-pituitary-adrenal axis (HPA) balances hormone releases from the adrenaline-producing adrenal medulla, and from the corticosteroid-producing adrenal cortex.
- ❖ Stress can significantly affect many of the body's immune systems.

Stress & psychoneuroimmunology (PNEI)

- **Stress is thought to affect immune function through emotional and/or behavioral manifestations (such as anxiety, fear, tension, anger and sadness) and physiological changes (heart rate, blood pressure. Sweating).**

Psychoneuroimmunology (PNI)

- **Stressful events trigger cognitive and affective responses which, in turn, induce sympathetic nervous system and endocrine changes, and these ultimately impair immune function.**
- **health consequences include rates of infection, HIV progression, and cancer incidence and progression**
- **These changes are beneficial if they are of limited duration, but when stress is chronic, the system is unable to maintain equilibrium or homeostasis**

Pathological Impact of Stress

1. Psychiatric disorders:

2. Stress disorders:

➤ **Acute Stress disorder**

➤ **Post traumatic stress disorder**

➤ **Adjustment disorder**

3. Physical disorder (Psychosomatic disorders):

STRESS SYMPTOMS

- Unusual heart beat (fast, pounding, irregular, etc.)
- Unusual breathing (fast, shallow)
- Restless feeling (feels like you have to move)
- Muscles feel tight or tens
- Frequent aches and pains
- Headaches
- Often get the flu or cold

STRESS SYMPTOMS

- Feels warm or hot when it isn't hot
- Sweat more than normal
- Dry mouth
- Nervous stomach (gas, diarrhea, constipation)
- Heartburn, Nausea,
- Loss/or increase in appetite
- Urinate more than normal
- Fatigue

STRESS SYMPTOMS

- **Obsessive worrying**
- **Lack of concentration**
- **Memory loss**
- **Feeling of self-consciousness, Shy, Lonely,**
- **Uncomfort, Irritability,**
- **seriousness Dissatisfaction,**
- **Fear, Anxiety, Anger, Panic**
- **Depressed mood, Unhappiness, Crying spells**
- **Insomnia**
- **Sexual problems**
- **Difficulty giving emotional support to others**

Selye Approach to Stress

(living wisely in accordance with natural laws)

- **Adopting an attitude of gratitude toward life.**
- **Acting toward others from altruistic motives.**
- **Retaining a capacity for wonder and delight in the genuinely good and beautiful things in life.**
- **Finding a purpose for one's life and expressing one's individuality in fulfilling that purpose.**
- **Keeping a healthy sense of modesty about one's goals or achievements.**

THANK YOU