**Stress and Illness/Disease**

Chapter 3

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**Hot Reactors**

- People who overreact to stressful situations.
- Symptoms of hot reactors can include:
  - feeling anger easily
  - often becoming anxious or depressed
  - urinating frequently
  - experiencing constipation or diarrhea more often than usual
  - experiencing nausea or vomiting

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**Psychosomatic Disease**

- Diseases for which the mind makes the body more susceptible.
- Also referred to as psychophysiological disease.
- Two types of psychosomatic disease are:
  - psychogenic
  - somatogenic
**Psychogenic Disease**

- Physical disease caused by emotional stress.
- The mind changes the body’s physiology so that body parts break down.
- Examples of psychogenic disease include
  - ulcers
  - asthma

**Somatogenic Disease**

- Physical disease caused by the mind increase the body’s susceptibility to:
  - disease-causing organisms (germs).
  - natural degenerative processes.
- Examples of somatogenic disease include
  - colds and other infections
  - cancer
  - rheumatoid arthritis

**Stress and the Immune System**

- **Psychoneuroimmunology** is the study of the chemical basis of communication between the mind and the body (nervous system and the immune system).
How Stress Affects the Immune System

- Research has demonstrated that the mind can:
  - increase the body's susceptibility to disease by reducing the effectiveness of the immune system.
  - increase the healing of the body by increasing the effectiveness of the immune system.
- Poorly managed stress can negatively affect the effectiveness of the immune system.

Basic Principles of the Immune Response

- The most important component of the immune response is the white blood cell (WBC).
- There are several categories of WBCs.
  - Phagocytes, including macrophages
  - B-cells, or B-lymphocytes
  - T-cells, or T-lymphocytes

Basic Principles of the Immune Response (cont'd)

- Types of T-lymphocytes
  - Helper-T cells
  - Killer-T cells
  - Suppressor-T cells
  - Memory-T cells
- B-cells can also become memory cells
Research Has Begun to Show That...

- Higher stress levels tend to lower the amount of antibodies in the bloodstream.
- Depression can lower the amount of antibodies in the body.
- Neuropeptides (chemical message transmitters from the brain) attract phagocytes (macrophages) to help combat infection.
- People in stressful situations tend to have a lower quantity of T-cells.
Stress-Related Psychosomatic Diseases

- Hypertension (essential)
- Stroke
- Coronary Heart Disease
- Ulcers
- Migraine Headaches
- Tension Headaches
- Cancer
- Allergies
- Asthma
- Hay Fever
- Rheumatoid Arthritis
- Backache
- TMJ Syndrome

Stress and Serum Cholesterol

- Cholesterol accumulates on the artery walls.
- Blocked arteries can cause:
  - coronary heart disease
  - strokes
- Stress is related to increased serum cholesterol.
- Perception of stressfulness is more significant than the situation itself. (perceived stress)
Hypertension & Heart Disease

- Defining Hypertension
  - SBP & DBP / borderline & essential hypertension
  - 41% of adults (60-80 million)
  - short & long term effects
    - cerebral hemorrhage
    - heart attack (myocardial infarction)
    - plaque
- Stroke- loss of flow (oxygen) to brain
- CHD & CAD
  - arteriosclerosis & atherosclerosis
  - research of stress & CHD // Type A Behavior Pattern
  - Flanders-Dunbar, Type A, Stoney, Everson (direct vs indirect)

Ulcers & Headaches

- Ulcers
  - salivary production, peristaltic activity & HCL
  - H. pylori- inflammatory bacteria
- Migraine Headaches (vascular)
  - prodromal symptoms (constriction phase)
  - causes: diet & personality characteristics?
- Tension Headaches (muscular)
- Backaches (muscular)

Cancer & Allergies etc

- Cancer-
  - stress may be directly (immune system) or indirectly (behavior) related
  - Cancer prone personality?
- Allergies, Asthma & Hay Fever
  - antigens & antibodies (histamine release)
  - asthma in absence of antigens
- Rheumatoid Arthritis
  - autoimmune disease--- some personality evidence
- TMJ- bruxism & other characteristics
Posttraumatic Stress Disorder

• A condition that develops in people who have experienced extreme psychological and/or physical event that is interpreted as particularly distressing.
  – A threat to one’s life, serious injury, or being subject to horror with intense fear and helplessness.
  – Recurrent flashbacks, repeated memories and emotions, dreams, nightmares, illusions, or hallucinations related to traumatic events from which one is often amnesic.

Posttraumatic Stress Disorder

• Most people will experience a traumatic event in their lives, and up to 25 percent of them will develop PTSD.

• People who have successfully managed PTSD have supportive relationships with family and friends, did not dwell on the trauma, had personal faith/religion, and had a sense of humor.