**Stress Related Illness**

**Behavioral Medicine**is aninterdisciplinary field that integrates behavioral and medical knowledge and applies that knowledge to health and disease. **Health Psychology**is a subfield of psychology that is concerned with how peoples attitudes, beliefs and behaviors affect their health and well-being.

**Stress**is defined asthe process by which we *perceive*and *respond* to events, called stressors, that we sense are threatening or challenging. The following events are described as stressors:

1. **Catastrophic Events-**earthquakes, combat stress, floods
2. **Life Changes-**death of a loved one, divorce, loss of a job, promotion
3. **Daily Hassles-**rush hour traffic, long lines, job stress, burnout (physical, emotional and mental exhaustion brought on by persistent job-related stress.
4. **Perceived Control-**loss of control can increase stress hormone
5. **Conflict**- includes disagreements with others as well as conflict within you. The latter can be described as being one of the following three types: approach-approach; approach-avoidance; avoidance-avoidance.

How we act to stressful events or if we even consider a situation to be stressful is determined by a number of things such as our perception of the event, a perceived lack of control, our personality and our coping abilities. What one person considers stressful may not at all affect another person.

**The Stress Response System**

**Walter Cannon**(1929) identified **epinephrine** (adrenaline) and **norepinephrine** (noradrenaline) as stress hormones. These hormones, controlled by the sympathetic nervous system, enter the bloodstream and cause increased heart rate and respiration as well as a diversion of blood to skeletal muscles in preparation for *fight or flight.* Physiologists have since identified a second stress response system in which the adrenal gland secretes the stress hormone **Cortisol** (Ordered by the cerebral cortex via the hypothalamus and the pituitary gland).

**General Adaptation Syndrome**isHansSelye's concept of the body's adaptive response to stress. He suggests that it is composed of three stages:

1. Phase 1: This is called the **Alarm reaction** during which there is a sudden activation of the sympathetic NS.
2. Phase 2: **Resistance** during which there is continued high temperature, blood pressure and respiration as well as an outpouring of "stress" hormones.
3. Phase 3: **Exhaustion** marked by a depletion of the bodys reserves and thus an increased vulnerability to illness.

**Stress and Disease**

**Psychophysiological Illness** (once referred to as *psychosomatic* disease) is described as "mind-body" illness such as a stress-related physical illness. It is different from a **somatoform disorder**(physical symptoms without physical reason) such as hypochondriasis where a person *misinterprets normal physical sensations* as symptoms of an illness. A psychphysiological illness has physical symptoms *due* *to* actual physical damage brought on by a psychological problem such as stress.

**Stress and Coronary Heart Disease**

**Coronary Heart Disease-**characterized by theclogging of the vessels that nourish the heart muscle. It is the leading cause of death in the US. Research has shown that people described as having type A personalities have a higher risk of coronary heart disease than people having Type B personalities.

**Type A-**Friedman and Rosenman's term for people, who are competitive, hard driving, impatient, verbally aggressive, and anger-prone.

**Type B-**Friedman and Rosenman's term for easygoing, relaxed people.

**Stress and the Immune System**

Our immune system is comprised of two types of **lymphocytes** (white blood cells) called *B lymphocytes* and *T lymphocytes*.

1. **B lymphocytes** are formed in the bone marrow and release antibodies that fight bacterial infections.
2. **T lymphocytes** are formed in the thymus and attack cancer cells, viruses and foreign substances.

**Research Findings:**

* Studies show that stress depresses the immune system of humans. Stress involves an aroused ***fight-or-flight***response that *diverts energy from our disease fighting immune system* rendering us more vulnerable to disease.
* Women appear to be have stronger immune systems than men which makes them less susceptible to infections but more vulnerable to self-attacking diseases such as Lupus and Multiple Sclerosis (MS).
* Stress does not cause the formation of cancer cells. As mentioned previously, stress weakens the immune system thereby reducing its ability to attack the growing cancer cells.
* Many studies have found that those patients with a positive approach and outlook had greater longevity. (Remember, putting on a happy face changes you physiologically as well!)

**Handedness and Health**

Some interesting statistics show that the percentage of left-handers declines with age (Coren, 1993). The reason suggested in the text is that left-handers must live in a world made for right-handers and therefore have possibly higher stress levels and greater risk of accidental death.