

## Chapter 9 Physical Disorders and Health Psychology

### The Mind-Body Connection: Sobering Facts

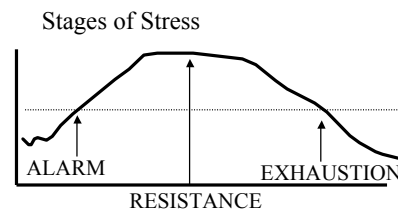
- Leading Causes of Death (1900)
  - Treatable Medical Conditions
- Leading Causes of Death (1993)
  - Disorders of Lifestyle / Behavior

### Psychosocial Factors That Influence Biology

- Historical Developments
  - Second revolution in public health
  - Early terminology
    - Psychosomatic Medicine
    - Psychophysiological disorders
  - New fields of study
    - Behavioral Medicine
    - Health Psychology

- Psychological & social factors influence health & physical problems in 2 distinct ways
  - They can affect the basic biological processes that lead to illness & disease
  - Longstanding behavior patterns may put people at risk to develop certain physical disorders

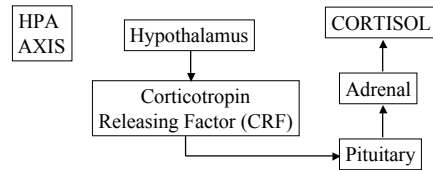
- The Nature and Role of Stress
  - Selye's Serendipitous Find – 1936
  - General Adaptation Syndrome (GAS)
    - The body goes through several stages in response to **sustained** stress
      - Alarm
      - Resistance
      - Exhaustion



- **Body's Response to Stress**

- Hypothalamus
- Limbic system
- Hippocampus is very responsive to cortisol
  - When stimulated by cortisol during HPA axis activity, the hippocampus turns off the stress response
  - Increased levels of cortisol in response to chronic stress may kill nerve cells in the hippocampus

### Body's Response to Stress



- **What Influences the Stress Response?**

- A sense of control
- A sense of predictability
  - Baboon studies

- **The Immune System and Physical Disorders**

- Stress and the Immune System
- Depression also lower immune system functioning

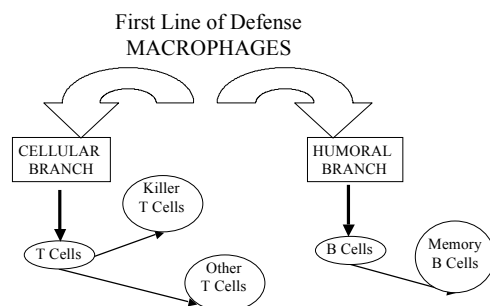
- **The Immune System: An Overview**

- Identifies and kills antigens
- Identifies and kills body's own cells that became aberrant or damaged
- **Two Main Divisions**
  - Humoral and Cellular
- Types of cells which function as agents
  - Leukocytes (White blood cells)
    - Macrophages
      - Surround & destroy antigens
    - Signal Lymphocytes

- Leukocytes

- Lymphocytes
  - B cells
    - Operate in humoral branch
    - Produce immunoglobulins
    - Create memory B cells
  - T cells
    - Operate in cellular branch
    - Killer T Cells** directly destroy viral infections & cancerous processes
    - Memory T Cells** speed future responses to the same antigen
    - T4 cells = Helper T Cells**
    - Suppressor T cells**

### The Immune System



- Autoimmune Disease
- Suppressed immune function
- Psychoneuroimmunology (PNI)
  - The object of study is **Psychological** influences on the **neurological** responding implicated in our **immune** response
  - Adler, 1974 — brain & immune system don't operate independently of each other

### Physical Disorders Influenced by Psychosocial Factors

- Psychosocial Link to Disease
  - AIDS
  - Cancer
  - Cardiovascular Diseases
  - Chronic Pain
  - Chronic Fatigue Syndrome

### Psychosocial Factors and AIDS

- Scope of the AIDS Epidemic
- Factors that extend survival in AIDS
  - Robust & strong immune system
  - Psychological factors
    - Stress-reduction procedures

### Psychosocial Factors and Cancer

- The Field of Psychoncology
  - Landmark study by Speigel et al., 1989
- Psychological Factors Influence
  - Course and also the **Development**
  - Response to Aversive Medical Treatment
  - Treatment & recovery from cancer in children

### Psychosocial Factors and Cardiovascular Diseases

#### Nature of Problems

- Heart, Blood Vessels, and Control Mechanisms
- Major Kinds of Disease
  - Stroke (CVA)
  - Hypertension (High Blood Pressure)
  - Coronary Heart Disease
- **Strongly** Influenced by Lifestyle Factors

#### Essential Hypertension

- “The Silent Killer”
- No verifiable physical cause (the majority)
- High Blood Pressure (> 160 / 95)
- Influenced by psychological & lifestyle factors
  - Strong relationship between levels of social support & blood pressure
  - Anger & hostility have been associated with increases in blood pressure

### Coronary Heart Disease

- Number one cause of death in U.S.
- Blockage of arteries supplying blood to the heart muscle
- Types:
  - Angina
  - Atherosclerosis
  - Ischemia
  - Myocardial Infarction (Heart Attack)
- Psychological Factors
  - Type A and B Behaviors
  - Chronic Negative Emotions

### Psychosocial Factors and Chronic Pain

- The nature of chronic pain
- Two kinds of clinical pain
  - Acute Pain
  - Chronic Pain
- Experience of Pain
  - Pain
  - Pain behaviors
  - Suffering
- Psychological and Social Dimensions
  - Pain severity does not predict one's reaction
  - Pre-existing anxiety & personality problems
  - Social support network

### • Biological Dimensions

- Gate Control Theory
  - Nerve impulses from painful stimuli make their way to the spinal column, & from there to the brain
    - *Dorsal horns of the spinal column*
  - The brain sends signals (excitatory or inhibitory) back down the spinal cord that may affect the gating mechanism
- Endogenous Opioids (“Endorphins”)
  - Act like neurotransmitters to shut down pain, even in the presence of marked tissue damage or injury

### Psychosocial Factors in CFS

- The Nature of Chronic Fatigue (CFS)
  - Unexplained fatigue
  - Variety of physical symptoms
    - Subjective memory impairment, sore throat, muscle or joint pain, headache etc.
  - Most common in women
  - Often debilitating
- Sharpe's 1997 Model

### Psychosocial Treatment for Physical Problems

- Available Treatments
  - Biofeedback
  - Relaxation Procedures (PMR)
  - Meditation (TM & Relaxation Response)
  - Hypnosis
  - Comprehensive Stress Management

### • Prevention Efforts

- Injury Control
- AIDS Prevention
- Smoking cessation
  - China study
- Stanford Three Community Study
  - Media blitz on CHD