Stress and Physical and Mental Health

I. What Is Stress?
- Health psychology is concerned with the effects of stress and other factors on the development and maintenance of physical problems, subfield of behavioral medicine (psychological factors that may predispose individuals to medical problems)
- Post-traumatic stress disorder (PTSD)
  A. Stress and the DSM
  B. Stress- when we perceive/ experience challenges to our physical or emotional well-being that exceed our coping resources and abilities, stressors= external demands, efforts= coping strategies, Hans Selye- coined term "stress," can be positive or negative, but bad stress (distress) can do more damage
- Relationship between stress and psychopathology is so important the role of stress is in diagnostic formulations
  A. Factors Predisposing a Person to Stress
- Factors that can improve one's ability to handle stress/ stress tolerance: optimism, psychological control, increased self-esteem, and better social support and possibly genetics, lack of stress early on in life
- Characteristics of Stressors
- What makes some stressors more stressful than others: 1.) severity 2.) chronicity 3.) timing 4.) how closely it affects our own lives 5.) how expected it is 6.) how controllable it is
- Crisis- times when a stressful situation threatens to exceed the adaptive capacities of a person or group
- Life changes, personal growth in the face of tragedy

II. Stress and the Stress Response
- Sympathetic-adrenomedullary (SAM) system- mobilizes resources and preps for fight or flight response:
  hypothalamus→ sympathetic nervous system (SNS)→ adrenal medulla→ norepinephrine (adrenaline) and norepinephrine (noradrenaline)→ increase in heart rate and metabolic rate= metabolizing of glucose
- Hypothalamic-pituitary adrenocortical (HPA) system- hypothalamus releases corticotrophin-releasing hormone (CRH) (and stimulates SNS)→ pituitary gland creates adrenocorticotropic hormone (ACTH)→ adrenal cortex produces cortisol (glucocorticoid, stress hormone)→ prepares body for fight or flight
- Too much cortisone causes brain and may stunts growth
  A. Biological Costs of Stress
- Allostatic load- the biological cost of adapting to stress (high when stressed)
- The Mind-Body Connection
- Psychoneuroimmunology- the study of the interaction between the nervous system and the immune system (ex. Glucocorticoids can cause stress-induces immunosuppression)
- Understanding the Immune System
- Immune system protects body from viruses, bacteria- too weak, susceptible to infection; too strong, it turns on body's own healthy cells (ex. Rheumatoid arthritis). White blood cells/ leukocytes/ lymphocytes are produces in bone marrow and stored throughout the body: 2 types- B-cell matures bone marrow, produces specific antibodies (fight off antigens- foreign bodies as well as internal tumors) and T-cells are inactive until stimulated by macrophages (immune cells that engulf antigens). When macrophages release chemical interleukin-1 (type of chemical called a cytokine), T-cells are activated and destroy antigens. T-cells then release cytokines that tell B-cells to divide and produce antigens when it comes in contact with an antigen
- Acquired immunodeficiency syndrome (AIDS) occurs after exposure to the virus that causes AIDS- human immunodeficiency virus (HIV) positive. More stress in HIV positive people results in faster development of AIDS.
  A. Stress, Depression, and the Immune System
  B. Immunosuppressing factors include sleep deprivation, marathon running, spaceflight, being the caregiver for a parent with dementia, death of a spouse
- Slows the healing of wounds by 24%-40%, depression is correlated with immunosuppression, chronic stress and depression may trigger the production of pro-inflammatory cytokines (ex. Interleukin-6, IL-6), IL-6 levels tend to increase with age but depend on other stressful situations. IL-6: increased aging, certain cancers, cardiovascular disease, overweight, smoking, sedentary lifestyle