AS Psychology
Unit 2: Stress
The Body's response to stress:
The Pituitary-Adrenal System (PAS):

- The body's response to chronic (long term) stress
- The hypothalamus registers the presence of continuing stressor,
- Releasing CRF and stimulates the pituitary gland to release ACTH,
- Which activates the adrenal cortex,
- Stimulates release corticosteroids into bloodstream.
- This maintains a steady supply of energy, but also suppresses the immune system

The Sympathomedullary Pathway (SMP):

- Body's response to short term stress
- Hypothalamus activates Sympathetic Branch of Autonomic Nervous System (ANS),
- Adrenal Medulla releases 'stress hormones',
- Such as Adrenaline and Noradrenaline
- Catecholamine: Hormones contribute to fight or flight response by increasing blood pressure and heart rate

Activating the body's stress response:
- The two system prepare the body for energy expenditure
- Corticosteroids, adrenaline and noradrenaline mobilize energy reserves, sustain blood flow and heart rate to get oxygen to muscles
- The higher centres are important for us to respond quickly
  → 'Saw a lion'
- Case 1: Run for lives
- Case 2: Hunt and chase
- Reaction=due to higher centres in the Cortex and Limbic system perceiving+evaluating the situation as threatening/attractive

- Run=energy needed
- To make sure energy=available,
- Higher centres → communicate with hypothalamus and ANS, stimulate a pattern of bodily arousal
- ACTH=released from pituitary → release of corticosteroids from Adrenal Cortex
- Sympathetic ANS arousal → release of Adrenaline & Noradrenaline from Adrenal Medulla
- When emergency=over, systems=return to normal level of functioning
- Cannon 1914: 'Fight or Flight'
Chronic stress and the immune system:

3 main stressors:

1) Conflict in interpersonal relationships:
   • Cohen 2005:
     • Relationship conflict lasting more than one month = particular at risk of developing illness when exposed to infectious agent
   • Kiecolt-Glaser et al. 2005:
     • Tested impact of interpersonal conflict on wound healing
     • Blister wounds of married couples healed more slowly after conflictive discussions
   • Mayne et al. 1997:
     • Women show greater immune system suppression following marital conflict

2) Death of spouse:
   • Unexpected bereavement → lower natural killer cell & lymphocyte activity
     (The difference was observed 40 days after death)
     (Some persisted after 6 months) Gerra et al. 2003
   • Men appear to be at greater risk of mortality following death of spouse
     (Kiecolt-Glaser and Newton 2001)

3) Care giving:
   • Caring for spouse with Dementia
   • Caregiver → socially isolated
   • Caregivers experience overwhelming demands physically, psychologically and show higher levels of depression, anxiety
   • Caregivers tend to show poorer immune function
     (Lower natural killer cell activity & poorer resistance to viral infection)
     By Kiecolt-Glaser et al. 2000

Age & Gender difference in the effects of stress on the immune system:
• National Consumer League 2003:
  • Women = more likely to report problems, being stressed than men (84% vs 76%)
  • People under the age of 65 = more likely to report being stressed than older people (82% vs 70%)
• Kiecolt-Glaser et al. 2003:
  • Significant difference between women, men in the way their immune system reacts to marital conflict
  • Women showing more adverse hormonal, immunological changes
• Segerstrom and Miller 2004:
  • Age makes people more vulnerable to stress related decreases in immune function because age makes it harder for body to regulate itself
Workplace Stress:

Sources of stress in the workplace:

i. Physical environment:
   - Space, temp, lighting, arrangement of an office will bring effects
   - Physical stressors make work more difficult
     (More energy needed to overcome them)
   - Arousal → frustration
   - Temp/Exposure to intense noise → Stress + Aggression

ii. Work overload:
   - Impact on individual and social structures (Family)
   - Home-work interface

iii. Lack of control:
   - Perceived lack of control → stress response, contributes to depression and illness

iv. Role ambiguity:
   - Requirements for particular work role = Unclear/poorly defined
   - Major factor contributing to work related stress
   - Also contribute to other sources of workplace stress
     (Relations with co-workers & lack of control)