Physical Changes in Middle Adulthood

Vision
- Presbyopia
  - lens loses its capacity to adjust to objects at varying distances
  - Problems reading small print
  - Bifocals if nearsighted
- Difficulties in dim light and reduced color discrimination
- Glaucoma
  - pressure builds up in the eye due to poor fluid drainage, damaging the optic nerve.

Hearing
- Presbycus

Skin Changes and Muscle-Fat Makeup

Skin
- Wrinkles
  - Forehead and crow’s Feet
- Sagging
  - Face, arms, legs
- Age Spots–After age 20
- Faster with sun exposure, for women

Muscle-Fat Makeup
- Middle-age spread common – fat gain in torso
  - Men: upper abdomen, back
  - Women: waist, upper arms
- Very gradual muscle declines
- Low-fat, calorie-reduced diet and weight-bearing exercise can help

Reproductive System
- Climacteric
  - Midlife transition in which fertility declines.
  - In women, an end to reproductive capacity.
  - In men, fertility diminishes but is retained.
  - The climacteric precedes actual menopause for women and occurs gradually over a 10-year period while the production of estrogen drops.

Reproductive System—Changes in Women
- Production of estrogen drops.
  - Monthly cycles shorten and become more irregular.
  - Climacteric ends with menopause which is the end of menstruation and reproductive capacity.
  - Ranges from 42–58; average age is 51
- Physical & psychological symptoms
  - Hot flashes (feeling hot), hot flushes (looking hot), headaches, sleep loss, slower sexual response, cold sweats (feeling cold and clammy)
  - Interpretation affects adjustment
- Hormone Replacement Therapy (estrogen doses) is controversial
  - Lifestyle, diet options
  - Prevents bone deterioration and cardiovascular disease; reduces discomforts, such as hot flashes.
  - Associated with cancer.
Menopause

- 1 year after the last menstrual period.
- Women's Psychological Reactions to Menopause
  - Traumatic if competence is tied to ability to have children.
  - Discomfort from physical symptoms and perceived loss of sex appeal.
  - Little or no problem.
  - More than just a hormonal event, it's also affected by societal beliefs and practices.
- Menopause as a bicultural event
  - The view of menopause affects the reaction to it.
  - Menopause can be viewed as a medical problem, a life transition, or a symbol of aging.

Reproductive System—Changes in Men

- Men experience a climacteric, but not like menopause.
- Quantity of semen and sperm decrease after 40, but sperm production continues throughout life.
- Testosterone production declines gradually with age, but the change is minimal in healthy men who continue to engage in sexual activity
  - Sexual activity stimulates cells that release testosterone
- Erection Problems
  - Stress, alcohol, heart or other diseases increase
  - Viagra
  - Impotence
  - Some men fear sex life is over, which can undermine

Sexuality

- Frequency
  - Couples having sex often in early adulthood continue in midlife.
  - Bidirectional
    - Sex more likely within good marriage, and
    - Couples having sex often view relationship more positively.
- Intensity of sexual response declines due to physical changes of the climacteric.
  - Both men and women take longer to feel aroused and reach orgasm.
- Age-related sexual activity
  - Sexual partners less available to women due to higher male mortality rate and the value women place on affection on continuity in sexual relations.

Illness and Disability

- Cancer (1/3 of all midlife deaths in US) and cardiovascular disease (heart attack, arrhythmia (irregular heartbeat) are the leading causes of death in middle adulthood.
- Among middle-aged men, rates of cardiovascular disease and cancer are similar
- Men more vulnerable to health problems
- Among middle-aged women, cancer is the leading cause of death
- Hostility as the “toxic” ingredient of Type A consistently predicts heart disease and other health problems.
Hostility and Anger

- **Type A behavior pattern**
  - Extreme competitiveness, ambition, impatience, hostility, angry outbursts, and a sense of time pressure
  - In some studies, twice as likely as Type Bs (more relaxed) to develop heart disease
  - Hostility is the “toxic” ingredient of Type A since isolating hostility from Type A predicts heart disease and other health problems in men and women.
- **Expressed hostility leads to greater cardiovascular arousal, health complaints, and illness**
  - Frequent angry outbursts
  - Rude, disagreeable behavior
  - Critical and condescending nonverbal cues during social interaction, including glares
  - Expressions of contempt and disgust
  - A hard, insistent voice
  - Repeatedly enraged are more likely to be depressed and dissatisfied with their lives
  - Men score higher in hostility than do women so emotional style may contribute to the sex differences in heart disease.

Stress Management

- **Can limit age-related rise in illness, and reduce severity of disease.**
- **Two strategies**
  - **Problem-centered coping**
    - Appraise the situation as changeable, identify the difficulty, and decide what to do.
  - **Emotion-centered coping**
    - Internal, private, aimed at controlling distress when there is little to do about a situation.
  - Effective coping with stress is the ability to move flexibly between problem-centered and emotion-centered techniques depending upon the situation.
  - Ineffective coping is largely emotion-centered and either impulsive or escapist.
  - People tend to cope with stress more effectively as they move from early to middle adulthood.
  - Teaching people to be assertive rather than hostile and to negotiate rather than explode interrupts the intense physiological response that intervenes between

Hardiness (Optimistic outlook)

- Hardiness enables people to cope with stress and reduce its impact on illness and mortality with 3 personal qualities.
- **3 personal qualities that make up hardiness:**
  1. Control
     - Regard most experiences as controllable
  2. Commitment
     - Find interest and meaning in daily activities
  3. Challenge
     - View as normal part of life, chance for growth
- Appraising stressful situations as manageable, interesting, and enjoyable predicts health-promoting behaviors, tendency to seek social support, and fewer physical symptoms
- **High hardy** individuals are likely to use active, problem-centered coping strategies in situations they can control.
- **Low hardy** individuals more often use emotion-centered

Crystallized and Fluid Intelligence

**Crystallized**
- Skills that depend on:
  - Accumulated knowledge
  - Experience
  - Good judgment
  - Master of social conventions
  - Valued by person’s culture
  - Measured by size of vocabulary, general information, verbal analogy, and logical reasoning items on an intelligence test
  - I.e. test items to measure C.I.:

**Fluid**
- Depends on basic information processing skills:
  - Detecting relationships among stimuli
  - Analytical speed
  - Working memory
  - Brain and learning unique to the individual, less by culture
  - Measured by number series, spatial visualization, figure matrices, and picture series items on an intelligence test
  - I.e. test items to measure F.I.:
Schaie’s Stages of Cognitive Development (Seattle long. Study)

<table>
<thead>
<tr>
<th>Acquisitive</th>
<th>Childhood and adolescence</th>
<th>Knowledge acquisition from concrete to formal operational thought</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achieving</td>
<td>Early adulthood</td>
<td>Adapting cognitive skills to achieve long-term goals</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Focus is less on acquiring knowledge and more on applying it to everyday life.</td>
</tr>
<tr>
<td>Responsibility</td>
<td>Middle adulthood</td>
<td>Cognition devoted to meeting responsibilities</td>
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<tr>
<td></td>
<td></td>
<td>Executive stage – most complex</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cognition extends to situations involving social obligations</td>
</tr>
<tr>
<td>Reintegrative</td>
<td>Late adulthood</td>
<td>Reexamine interests, attitudes, value to use as a guide for maximizing quality of life.</td>
</tr>
</tbody>
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Changes in Mental Abilities

- General slowing of the CNS functioning underlies nearly all age-related declines in cognitive performance.
- Crystallized intelligence increases into late adulthood; fluid intelligence starts to decline in late twenties or early thirties.
- Perceptual speed drops steadily starting in the twenties.
- Longitudinal research shows stability in a variety of crystallized and fluid abilities during middle adulthood.
  - Decrease in basic processing is modest until late in life.
  - Adults compensate by changing to activities depending less on cognitive efficiency (fluid intelligence), more on accumulated knowledge (crystallized intelligence).

Information Processing—Speed of Processing

- Simple and complex tasks
  - The more complex the situation, the more disadvantaged older adults
- 2 views:
  1. Neural network view
     - Neurons die; breaks in neural networks
     - Brain forms less efficient synaptic connections.
  2. Information-loss view
     - Older adults differ in rate of information loss as it moves through the cognitive system resulting in the whole system slowing down to interpret info.
       - I.e. it’s like making a photocopy and using it to make other copies—each copy is less clear.
     - The processing speed predicts performance on many tests of complex abilities.
     - Practice and experience compensate for speed.

Information Processing--Attention

- Sustaining two complex tasks at once becomes harder.
- This may be due to the slowdown in info processing which limits the amount of info a person can attend to at once.
- Focusing on relevant information becomes more difficult or stated differently, resistance to interference (inhibition) from irrelevant info is harder.
  - May be due to reduced processing speed
- Training and practice can improve the ability to divide and control attention.
Information Processing--Memory

- **Memory** is crucial for all aspects of info processing.
  - Amount of information in working memory diminishes.
  - Use of memory strategies declines.
    - Requires linking new info with already stored info—harder to retrieve info from long-term memory that helps with recall.
    - Irrelevant stimuli take up space in working memory, less available for task at hand
- **Compensation**
  - Allow more time for processing.
  - Self-paced vs. pressured leads to improved performance.
- **General factual knowledge** (i.e. historical events), procedural knowledge (i.e. how to drive a car or solve a math problem), and knowledge related to occupation remain unchanged or increase.
  - Metacognitive knowledge is used to maximize performance.
    - i.e. reviewing major points before an important presentation or parking the car in the same spot daily