Chapter 17: Physical Development in Late Adulthood

Life Expectancy and Life Span
- Life Span: the maximum number of years an individual can live; has remained between 120–125 years
- Life Expectancy: the number of years that the average person born in a particular year will probably live
  - Has increased an average of 30 years since 1900
  - Average life expectancy today is 77.6 years

Differences in Life Expectancy
- Japan has the highest life expectancy (82 years)
- Differences in life expectancy across countries are due to factors such as health conditions and medical care
- Ethnic Differences
  - Life expectancy for African Americans is 7 years lower than that of non-Latino Whites
  - Female life expectancy 80.7 years, males 75.4 years

Longevity
- Centenarians
  - Increasing by approximately 7% each year
- Explanations:
  - Diet
  - Low-stress lifestyle
  - Caring community
  - Activity
  - Spirituality
### Longevity

- **The Young-Old, the Old-Old, and the Oldest-Old**
  - Some developmentalists divide late adulthood:
    - Young-old are aged 65 to 74
    - Old-old are aged 75 or more
    - Oldest-old are aged 85 or more
  - Important to consider functional age, the person's actual ability to function, rather than age

### Biological Theories of Aging

- Evolutionary Theory
- Cellular Clock Theory
- Free-Radical Theory
- Mitochondrial Theory
- Hormonal Stress Theory

### The Course of Physical Development in Late Adulthood

- **The Aging Brain**
  - The Shrinking, Slowing Brain
    - On average, the brain loses 5% to 10% of its weight between the ages of 20 and 90 years; brain volume also decreases
    - May result from a decrease in dendrites, damage to myelin sheath, or the death of brain cells
    - A general slowing of function in the brain and spinal cord begins in middle adulthood and accelerates in late adulthood affecting physical coordination and intellectual performance
  - Aging has been linked to a reduction in the production of certain neurotransmitters

- **The Adapting Brain**
  - As the brain ages, it adapts in several ways:
    - Neurogenesis: the generation of new brain cells
    - Dendritic growth can occur in human adults
    - Older brains rewire to compensate for losses
    - Hemispheric lateralization can decrease; may improve cognitive functioning
The Adapting Brain

The immune system declines in functioning with age

- Extended duration of stress; diminished restorative processes
- Malnutrition involving low levels of protein
- Exercise improves the immune system, and influenza vaccination is very important for older adults

Physical Appearance and Movement

- Wrinkles and age spots are the most noticeable changes
- People get shorter with aging due to bone loss in their vertebrae
- Weight typically drops after we reach age 60; likely because we lose muscle
- Adequate mobility is an important aspect of maintaining an independent and active lifestyle in late adulthood
Physical Appearance and Movement

The Course of Physical Development in Late Adulthood

- Sensory Development
  - Vision
    - Decline in vision becomes more pronounced
    - Adaptation to dark and driving at night becomes especially difficult
    - Color vision and depth perception also decline

Sensory Development

The Course of Physical Development in Late Adulthood

- Diseases of the Eye
  - Cataracts: a thickening of the lens of the eye that causes vision to become cloudy, opaque, and distorted
  - Glaucoma: damage to the optic nerve because of the pressure created by a buildup of fluid in the eye
  - Macular Degeneration: deterioration of the macula of the retina, which corresponds to the focal center of the visual field
The Course of Physical Development in Late Adulthood

- Sensory Development
  - Hearing:
    - Hearing impairments are typical in late adulthood
    - Hearing aids and cochlear implants can minimize the problems linked to hearing loss
  - Smell and Taste:
    - Smell and taste losses typically begin about age 60
  - Touch and Pain:
    - Slight decline in touch sensitivity and sensitivity to pain with age

The Course of Physical Development in Late Adulthood

- The Circulatory System and Lungs
  - Cardiovascular disorders increase in late adulthood
  - High blood pressure can be linked with illness, obesity, anxiety, stiffening of blood vessels, or lack of exercise and should be treated
  - Lung capacity drops 40% between the ages of 20 and 80, even without disease, but can be improved with diaphragm-strengthening exercises

The Course of Physical Development in Late Adulthood

- Sexuality
  - Orgasm becomes less frequent in males with age
  - Many older adults are sexually active as long as they are healthy
  - Various therapies have been effective for older adults who report sexual difficulties

Sexuality

<table>
<thead>
<tr>
<th>Percentage of older adults who reported sexual activity with a partner in the previous 12 months</th>
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</thead>
<tbody>
<tr>
<td>Age group</td>
</tr>
<tr>
<td>57-64</td>
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<tr>
<td>30%</td>
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</tbody>
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Health

• Health Problems

  ▪ Probability of having some disease or illness increases with age
    ▪ Arthritis is the most common followed by hypertension

Health Problems

• Health Problems

  ▪ Causes of Death in Older Adults
    ▪ Nearly 60% of 65–74-year-olds die of cancer or cerebrovascular disease; for 75–84 and 85+ age groups, cardiovascular disease is still the leading cause of death
    ▪ Ethnicity is also linked with death rates of older adults
### Health

#### Health Problems
- Arthritis: an inflammation of the joints accompanied by pain, stiffness, and movement problems
- Osteoporosis: extensive loss of bone tissue
- Accidents: 6th leading cause of death in older adults

#### Substance Use and Abuse
- Multiple medications can increase the risks associated with consuming alcohol or other drugs
- Majority of U.S. adults 65 and older completely abstain from alcohol
- Substance abuse among older adults may be an “invisible epidemic”

#### Substance Use and Abuse
- Late-Onset Alcoholism: onset of alcoholism after the age of 65
  - Often related to loneliness, loss of a spouse, or a disabling condition
- Moderate drinking of red wine is linked to better health and increased longevity

#### Exercise, Nutrition, and Weight
- Exercise
  - Improves older adults’ cellular functioning and immune system functioning
  - Linked to increased longevity and prevention of common chronic diseases
  - Associated with improvement in the treatment of many diseases
Health

- Exercise, Nutrition, and Weight

- Exercise
  - Can optimize body composition and reduce the decline in motor skills as aging occurs
  - Reduces the likelihood that older adults will develop mental health problems
  - Linked to improved brain and cognitive functioning

- Nutrition and Weight
  - Some older adults restrict their dietary intake in a way that may be harmful to their health
  - Decreased snacking between meals may contribute to harmful weight loss
  - Calorie restriction has been proven to extend the life span of certain animals, but it is not known if this works in humans

Health

- Exercise, Nutrition, and Weight

- Exercise

- Nutrition and Weight

- The Controversy over Vitamins and Aging
  - New research suggests that antioxidants may help slow the aging process and possibly prevent some diseases
  - There is now more interest in the possible link between vitamins and cognitive performance in older adults

- Health Treatment

- Health

- Health Treatment

- Some studies show older adults in the U.S. receive the recommended medical care only half the time
  - Many specialists recommend alternatives, such as home health care, elder-care centers, and preventative medicine clinics
  - Patient's feelings of control and self-determination are important for health and survival in nursing homes
Health

Percentage of residents who needed treatment

Perceived control  Dependent

0  10  20  30  40

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