

# Life-Span Development Thirteenth Edition

## Chapter 17: Physical Development in Late Adulthood

## Longevity

- 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

## Longevity

- Life Expectancy and Life Span
  - Differences in Life Expectancy
    - Japan has 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

- Life Expectancy and Life Span
  - 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

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5

## Longevity

- Biological Theories of Aging
  - Evolutionary Theory
  - Cellular Clock Theory
  - Free-Radical Theory
  - Mitochondrial Theory
  - Hormonal Stress Theory

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6

## 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

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7

## The Course of Physical Development in Late Adulthood

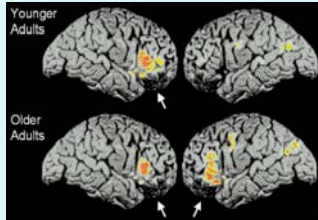
- The Aging Brain
  - The Adapting Brain
    - As the brain ages, it adapts in several ways:
      - Neurogenesis: the generation of new brain cells
      - Dendritic growth can occur in human adults
      - Older brains rewire to compensate for losses
      - Hemispheric lateralization can decrease;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

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## The Course of Physical Development in Late Adulthood

### The Adapting Brain



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9

## The Course of Physical Development in Late Adulthood

### • The Immune System

- 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

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10

## The Course of Physical Development in Late Adulthood

### • Physical Appearance and Movement

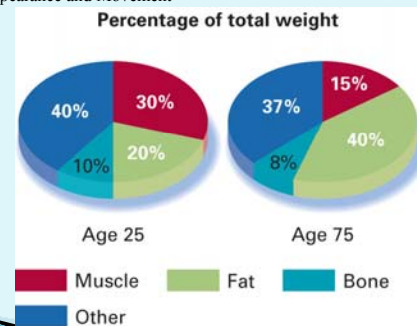
- Wrinkles and age spots are the most noticeable changes
- People get shorter with aging due to bone loss in their vertebrae
- Weight typically drops after we reach age 60; likely because we lose muscle
- Adequate mobility is an important aspect of maintaining an independent and active lifestyle in late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

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11

## The Course of Physical Development in Late Adulthood

### Physical Appearance and Movement

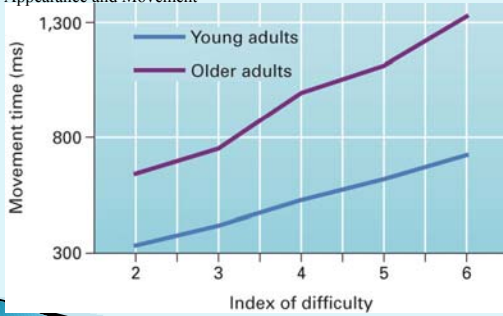


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12

### The Course of Physical Development in Late Adulthood

Physical Appearance and Movement



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13

### The Course of Physical Development in Late Adulthood

▪ Sensory Development

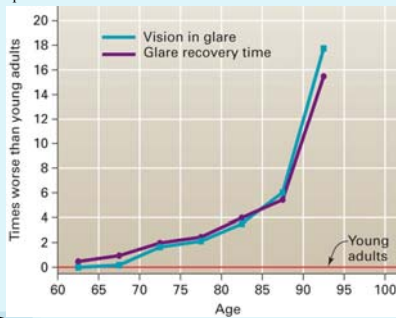
- Vision
  - Decline in vision becomes more pronounced
  - Adaptation to dark and driving at night becomes especially difficult
  - Color vision and depth perception also decline

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14

### The Course of Physical Development in Late Adulthood

Sensory Development



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15

### The Course of Physical Development in Late Adulthood

▪ Sensory Development

- 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

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16

## 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

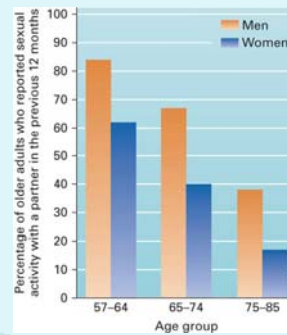
- The Circulatory System and Lungs
  - Cardiovascular disorders increase in late adulthood
  - High blood pressure can be linked with illness, obesity, anxiety, stiffening of blood vessels, or lack of exercise and should be treated
  - Lung capacity drops 40% between the ages of 20 and 80, even without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

## The Course of Physical Development in Late Adulthood

Sexuality

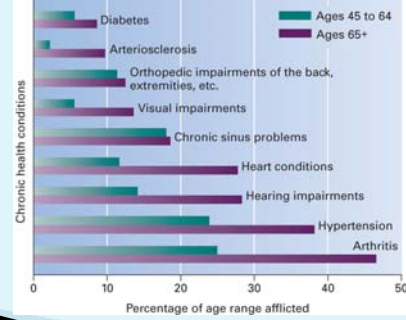


## Health

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

## Health

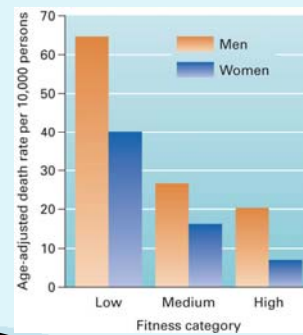
Health Problems



## Health

- 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

- Health Problems

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

## Health

- 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”

## Health

- 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

## Health

- 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

29

## Health

- Exercise, Nutrition, and Weight
  - 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

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30

## Health

- 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

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31

## 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

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32



