

Chapter 18:

Physical Development in Late Adulthood

Longevity

- **Human life span has not changed throughout history**
- **Life expectancy in the U.S. has increased to an average of 77 years (80 for women, 74 for men) due to**
 - **Medical advances**
 - **Better nutrition**
 - **More exercise**
 - **Healthier lifestyles**
- **Life expectancy in the U.S. for African Americans is an average of 70 years**

- **Cross-culturally**
 - **Japan has highest life expectancy (81 years)**
 - **Differences in life expectancy include health conditions and medical care across the life span**
- **Females' ability to outlive males widens, beginning in their mid-thirties**
- **Men are more likely than women to die from**
 - **Respiratory cancer and coronary heart disease**
 - **Motor vehicle accidents**
 - **Suicide**
 - **Cirrhosis of the liver and emphysema**

- **Sex differences in life expectancy**
 - **May be narrowing as more women are exposed to workplace stress**
 - **Is influenced by biological factors**
- **Centenarians in the U.S. numbered 77,000 in 2000 compared with 15,000 in 1980**
 - **Getting older may not mean getting sicker**
 - **Many are women who never married and who had unique ways of coping with stress**
- **Many important factors are related to longevity**

Risks of Dying from Cancer in Okinawa, in Japan, and in the United States

Breast Ovarian
Prostate Colon

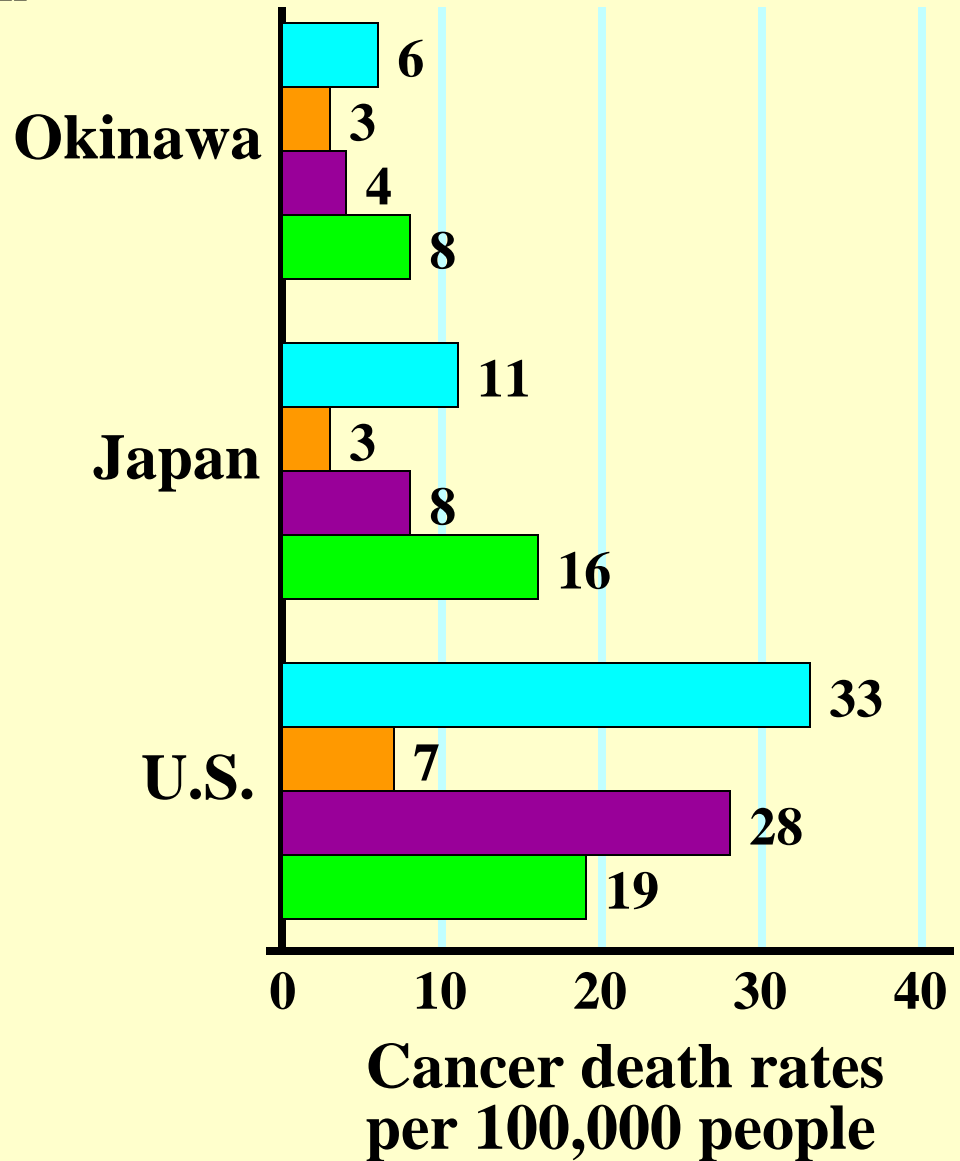


Fig. 18.2

- **Considering what is meant by “old”**
 - **Young-old are aged 65 to 74**
 - **Old-old are aged 75 or more**
 - **Oldest-old are aged 85 or more**
- **Differences between levels of “old”**
 - **Potential for physical and cognitive fitness**
 - **Levels of emotional well-being**
 - **Effective strategies for mastering gains and losses of old age**

- **The oldest-old**
 - **Are mostly female, widowed, and living alone**
 - **Are usually hospitalized at some time in last years of life**
 - **Die mostly alone in a hospital or institution**
 - **Are a heterogeneous, diverse group**

- **Four basic biological theories of aging:**
 - **Cellular clock theory**
 - **Free-radical theory**
 - **Mitochondrial theory**
 - **Hormonal stress theory**

- **Cellular clock theory: cells replicate 75-80 times before dying – maximum life span is therefore 120–125 years**
- **Free-radical theory: normal aging creates molecules that damage DNA and cells, leading to disorders and diseases – lifestyle can affect damage process**
- **Mitochondrial theory: decay of mitochondria in cells causes aging, creates continual loss of energy**
- **Hormonal stress theory: hormone levels stay higher for longer as one ages, diminishing immune system**

The Course of
Physical
Development in
Late Adulthood

- **On average, the brain shrinks 5% to 10% between ages 20 and 90 – various theories try to explain it**
- **Some areas of the brain shrink more than others – shrinking of prefrontal cortex is linked to decrease in working memory in older adults**
- **A general slowing of function in the brain and spinal cord begins in middle adulthood**
- **The brain has remarkable repair capacity such that it retains most of its abilities in late adulthood**

- **As the brain ages, it adapts in several ways:**
 - **New brain cells are generated throughout life**
 - **Dendrite growth increases from the 40s to 70s**
 - **Older brains rewire to compensate for losses**
 - **Myelination increases in the 40s and 50s**
 - **Hemispheric lateralization can decrease**

- **The immune system declines in functioning with aging, including a decrease in numbers of T cells**
- **Exercise improves the immune system, and influenza vaccination is very important for older adults**
- **People get shorter with aging due to bone loss**
 - **Men losing about 1.25 inches from age 30 to 70**
 - **Women losing about 2 inches from age 25 to 75**
- **Exercise and weight lifting help reduce muscle mass loss and changes in body appearance**

Changes in Body Composition of Bone, Muscle, and Fat from 25 to 75 Years of Age

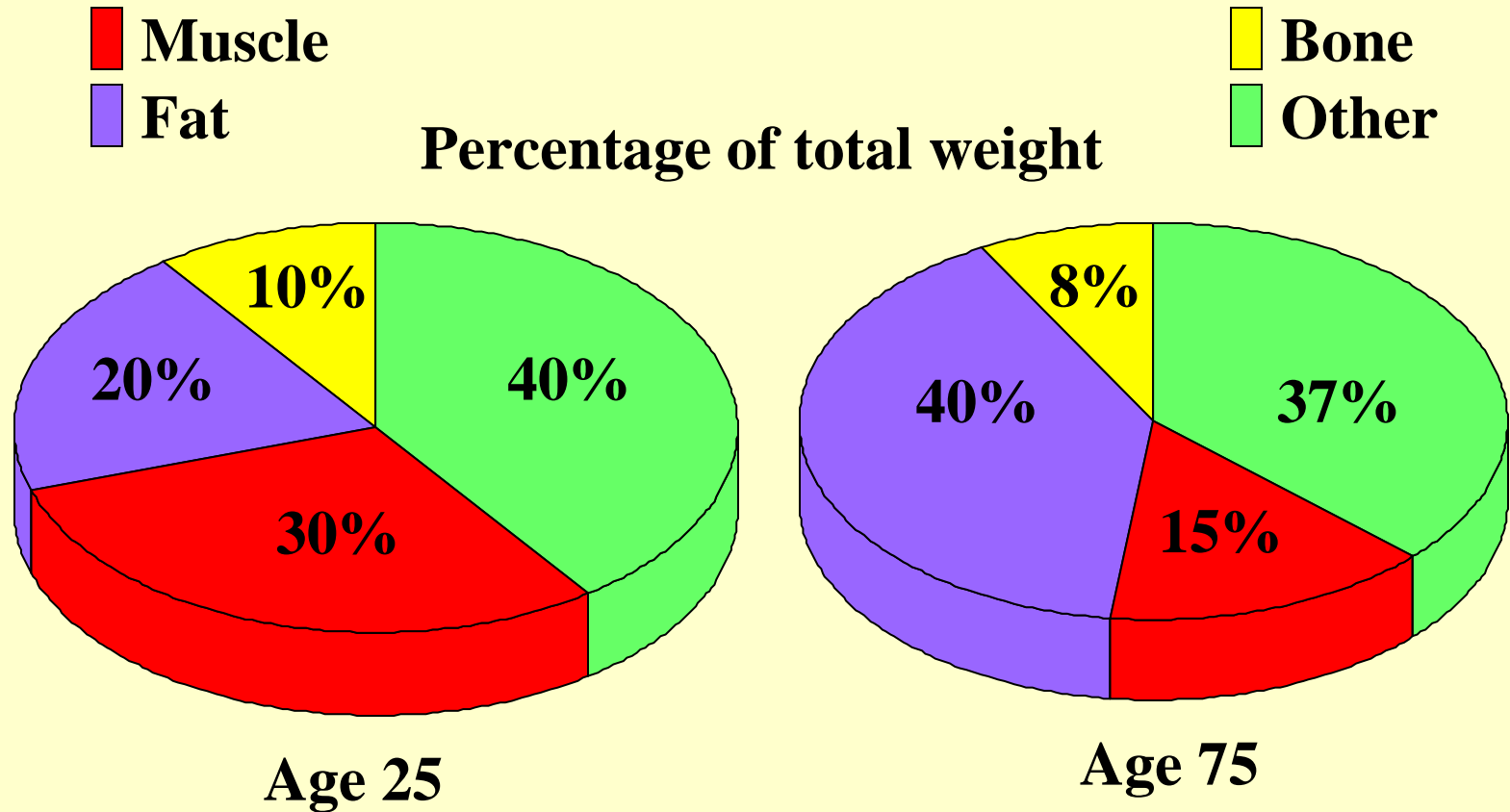


Fig. 18.6

- **Slower movement in older adults affects simple, everyday tasks like**
 - **Reaching**
 - **Grasping**
 - **Walking**
 - **Climbing**

- **Regular walking can slow onset of physical disability**

Movement and Aging

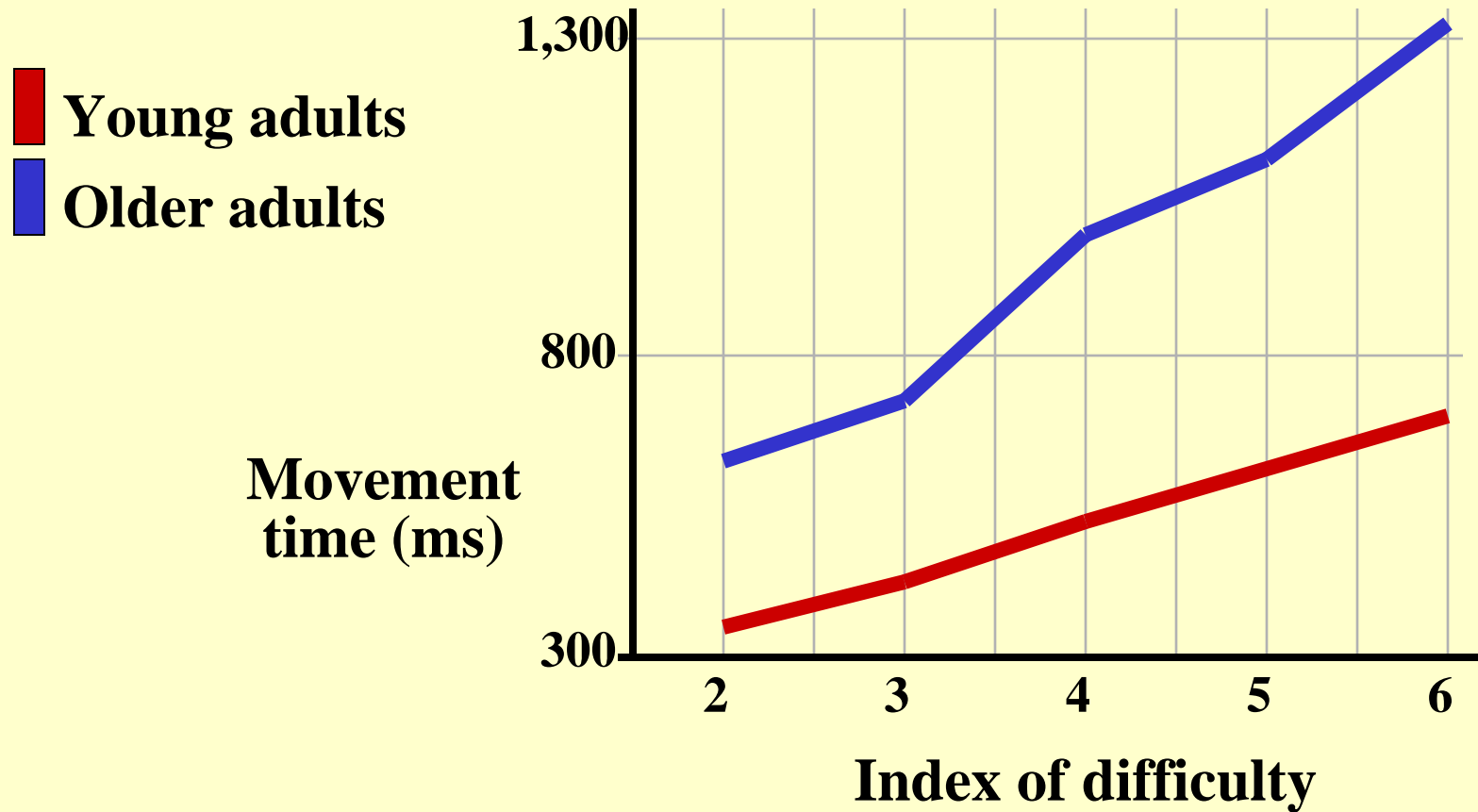


Fig. 18.7

- **Sensory changes in late adulthood involve**
 - **Vision and hearing**
 - **Taste and smell**
 - **Touch and pain**
- **Degenerative changes in the retina result in decreased light entering it, a process that begins before late adulthood**
- **Eye diseases of older adults include**
 - **Cataracts**
 - **Glaucoma**
 - **Macular degeneration**

Rates of Decline in Visual Functioning Related to Glare in Adults of Different Ages

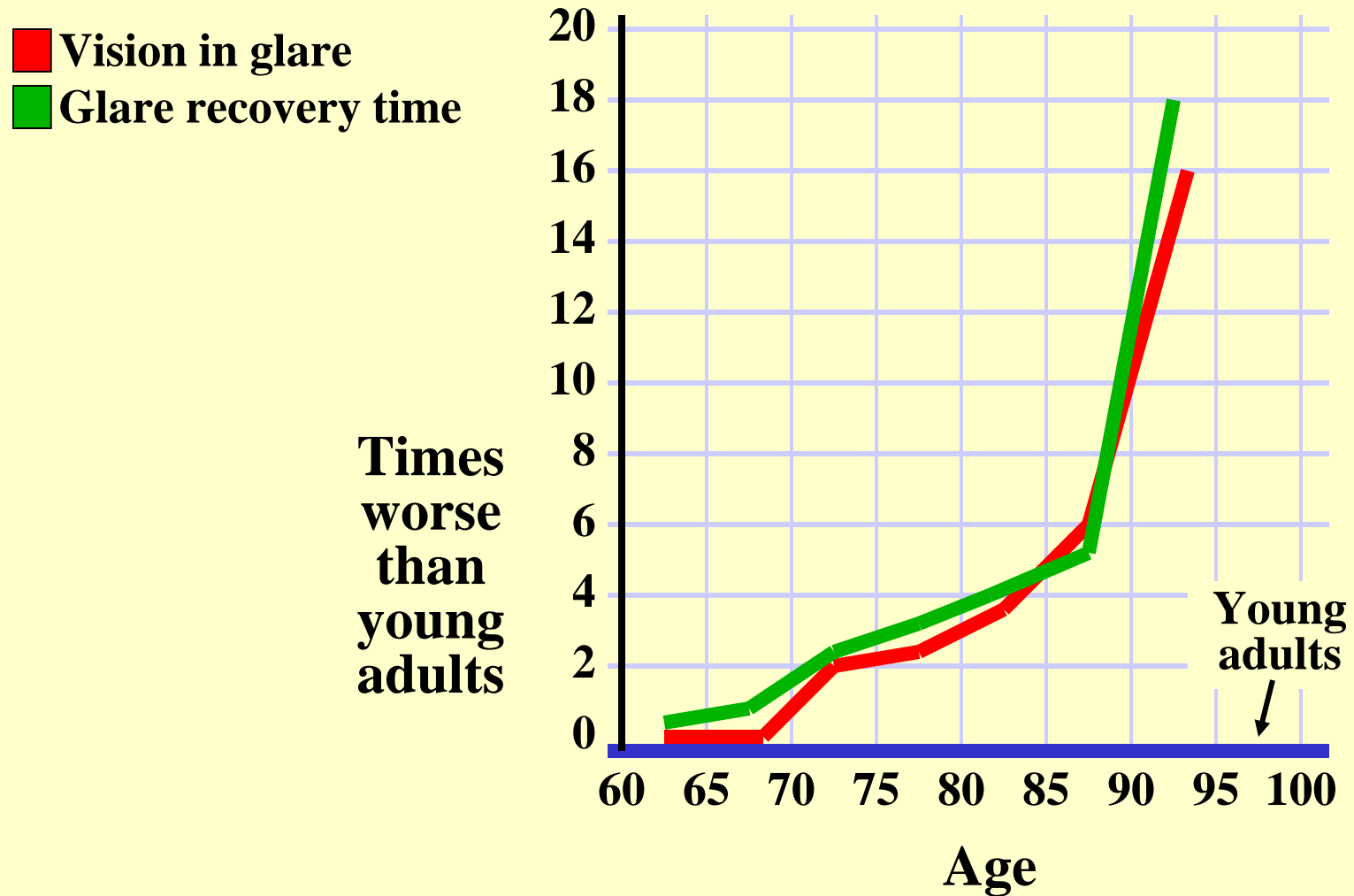


Fig. 18.8

- **Hearing impairments come in late adulthood but most can be corrected by hearing aids**
- **Smell and taste losses begin about age 60**
 - **Less loss in healthier older adults**
 - **Creates a desire for highly seasoned foods**
- **Older adults are less sensitive to pain and suffer from it less than young adults**
- **The amount of blood pumped by the heart is now known to remain the same regardless of age**

- **Rising blood pressure with age can be linked to**
 - **Illness**
 - **Obesity**
 - **Anxiety**
 - **Stiffening of blood vessels**
 - **Lack of exercise**
- **Lung capacity drops 40% between ages 20 and 80 even when disease-free**
- **Aging induces more changes in males than females but sexuality can be lifelong**

Health

- **Chronic diseases are rare in early adulthood but increase and become more common in late adulthood**
 - **Arthritis is the most common**
 - **Hypertension is the second most common**
- **Older women have a higher incidence of arthritis, hypertension, and visual problems than older men**
- **Older men are more likely than women to have hearing impairments**
- **Lifestyle and social and psychological factors are linked to health in older adults**

Most Prevalent Chronic Conditions in Middle and Late Adulthood

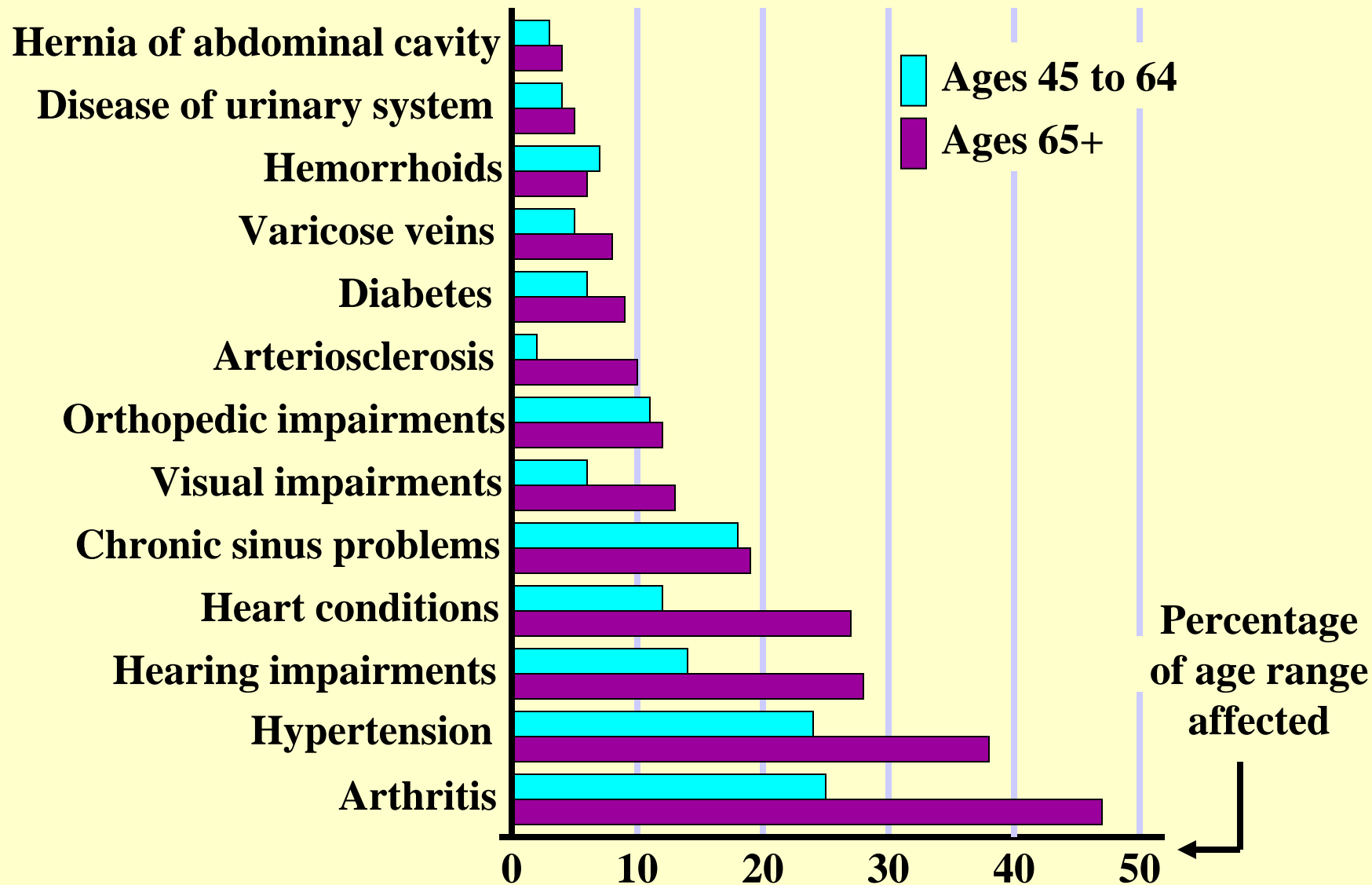


Fig. 18.10

- **The six leading causes of death in older adults are**
 - **Heart disease**
 - **Cancer**
 - **Cerebrovascular disease (stroke)**
 - **Chronic lung disease**
 - **Pneumonia or influenza**
 - **Diabetes**
- **Nearly 75% die from the first three of these causes**
- **Ethnicity is linked with death rates of older adults – overall rates are highest for African Americans**

- **Arthritis is common in older adults, affecting joints and vertebrae, but symptoms can be reduced by**
 - **Use of some drugs like aspirin**
 - **Range-of-motion exercises**
 - **Weight reduction**
 - **Joint replacement in extreme cases**

- **Osteoporosis affects many more women than men and can be prevented by**
 - **Eating calcium-rich foods and vegetables**
 - **Having a regular exercise program**
 - **Medication**

- **The common image of the oldest-old is one of frailty and disability – those aging successfully are unnoticed**
- **Regular exercise in late adulthood leads to a healthier, happier, and longer life**
 - **The average adult's lean body mass declines with age – about 6.6 pounds every 10 years**
 - **Exercise helps adults live independent lives with dignity in late adulthood**

Physical Fitness and Mortality

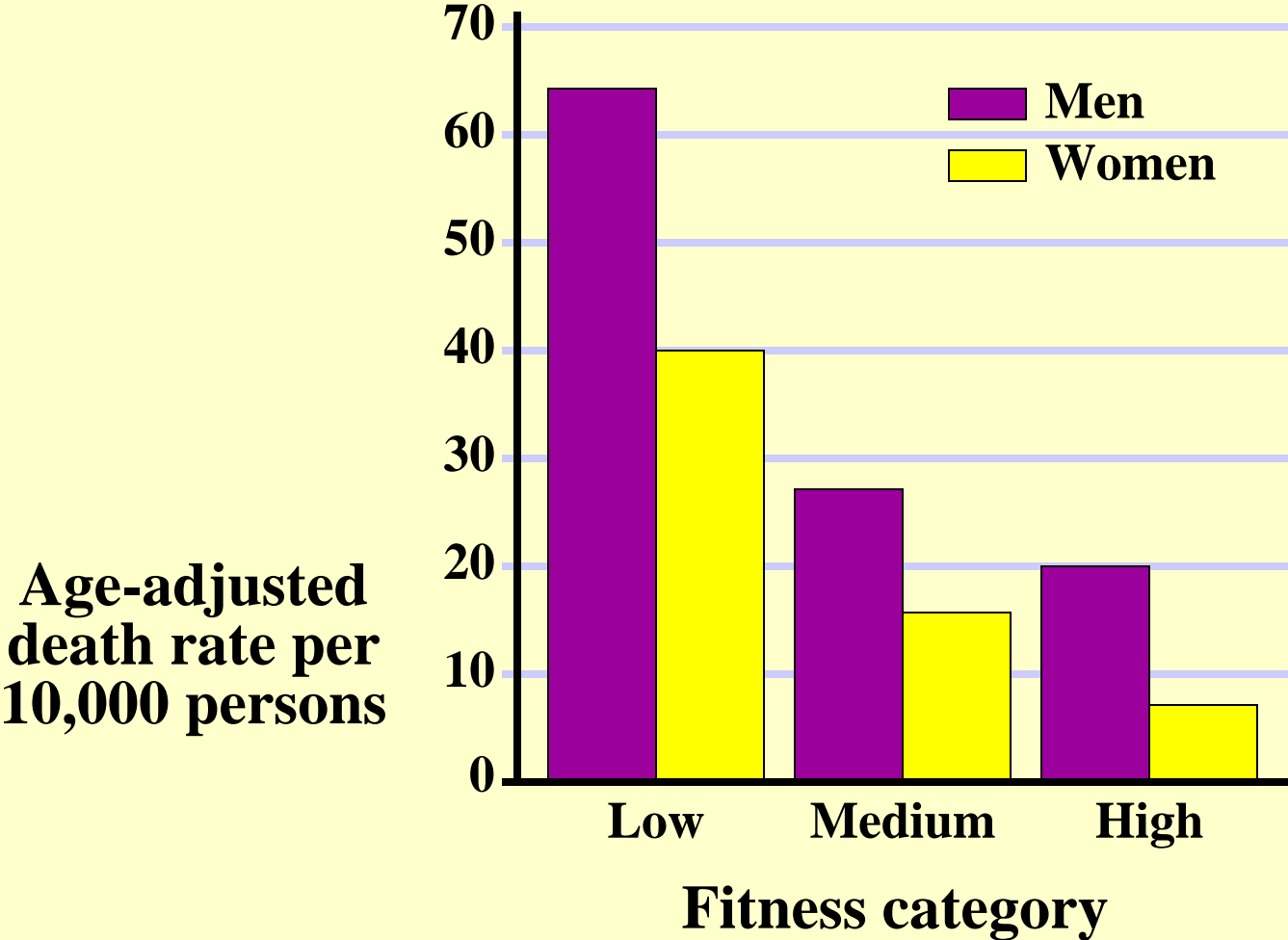


Fig. 18.11

- **Some older adults restrict their dietary intake in a way that may be harmful to their health**
- **Decreasing snacks between meals contributes to harmful weight loss – especially in women**
- **It is not known if low-calorie diets can extend human life, but low-calorie diets are not recommended for older adults**
- **New research shows antioxidants may help slow the aging process – and possibly prevent some diseases**

- **Other factors such as exercise, better health practices, and good nutritional habits may be actual cause of positive correlation between vitamin intake and slower aging, but more research needs to be done**
- **There is now more interest in possible links between vitamins and cognitive performance in older adults**
- **A majority of U.S. adults over age 65 abstain from alcohol mostly because of illness or disease**
- **Substance abuse in older adults may go undetected because its consequences get diagnosed independently**

Age and the Consumption of Five or More Drinks on at Least 1 Day in the United States

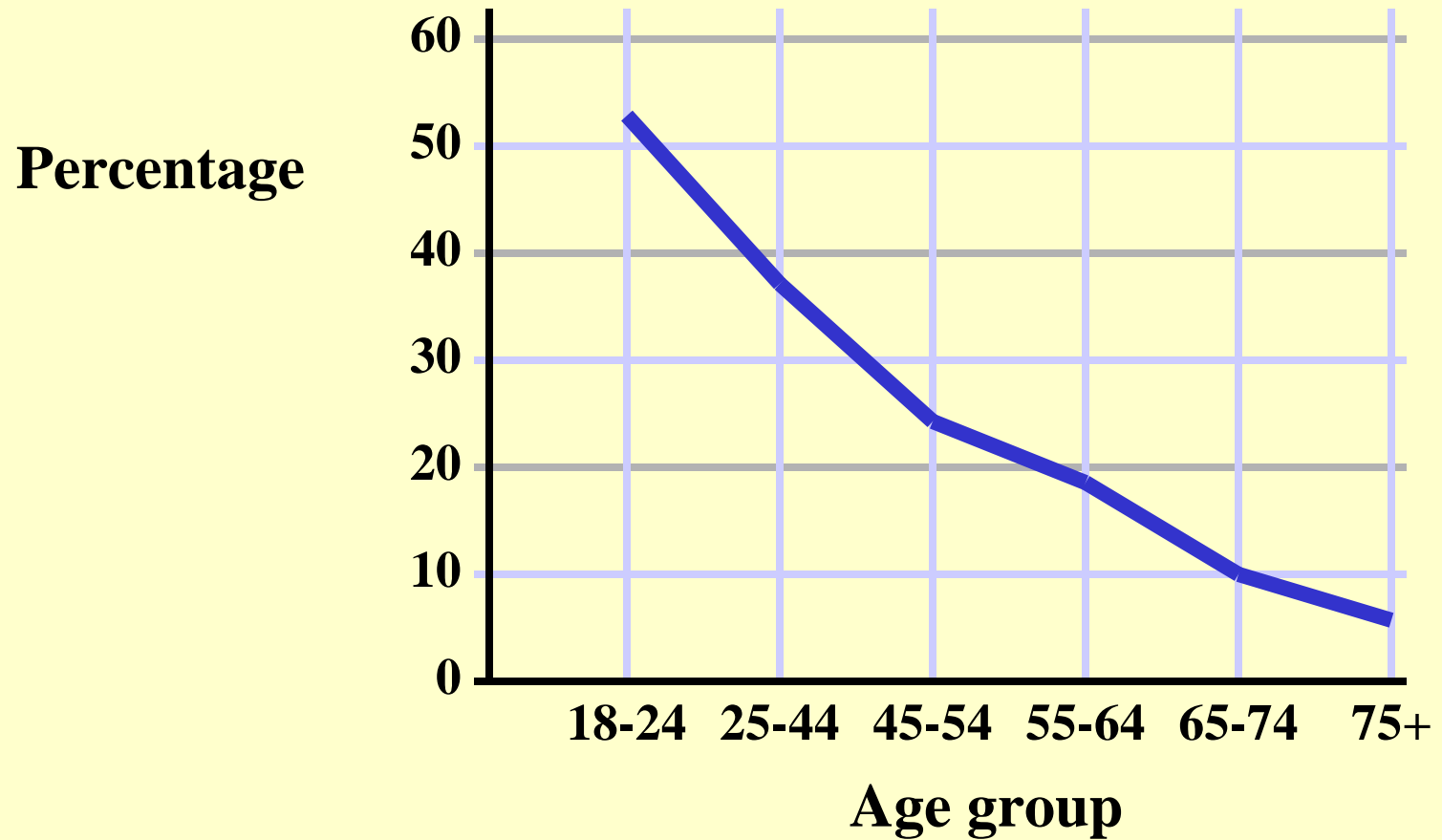


Fig. 18.14

- **Some studies show older adults in the U.S. get less than half of the recommended health care that they need**
- **About 3% of adults over age 65, and 23% of adults over age 85, will reside in nursing homes at some time in their lives**
- **The quality of nursing homes and extended-care facilities varies and is a source of concern – over 33% fail to meet minimum federal standards**
- **Attitudes of both health-care provider and older adult are important in older-adult health care**

Perceived Control and Mortality

Percentage of nursing-home residents who had died 18 months later

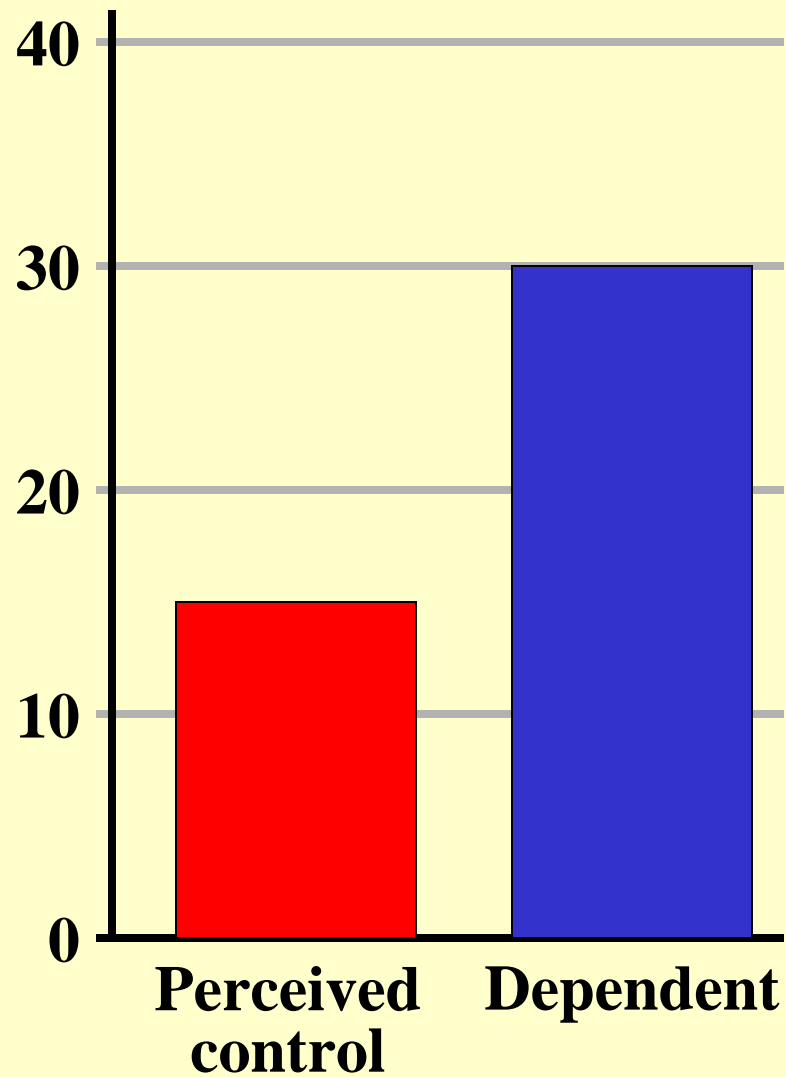


Fig. 18.15

The End