Between the ages of 25 and 65, most people experience a variety of physical changes, such as wrinkling, graying and thinning of the hair, redistribution of fat deposits, and slowing down of the brain. In addition, sensory acuity generally declines. Most of these physical changes have no significant health consequences, however.

Most women find menopause, with its accompanying cessation of menstruation and decline in estrogen, much less troubling than they expected it to be. Although men do not experience sudden age-related drops in hormone levels or fertility, sexual response does slow down over time.

Health in middle age is powerfully affected by each person’s routines and habits of daily life, not only currently but also since childhood. Risk factors for poor health include cigarette smoking, alcohol consumption, obesity, lack of exercise, and accumulated stress.

The chapter discusses the latest ways in which variations in health are measured to reflect quality of living, in addition to traditional measures of illness and death rates. Distinguishing the effects of income, education, cohort, and culture on health is difficult because all these factors overlap.

What Have You Learned?

The “What Have You Learned?” questions at the end of the text chapter are reprinted here for your convenience in checking students’ understanding of the chapter contents.

1. What is the connection between senescence and serious disease?
2. How often and why do people lose significant brain function before age 65?
3. What are the visible changes in the skin between ages 25 and 65?
4. What are the visible changes in the hair between ages 25 and 65?
5. What are the visible changes in the body shape between ages 25 and 65?
6. How does aging affect nearsightedness and farsightedness?
7. Why are hearing losses expected to increase in the next generation?
8. How are men and women affected by the changes in sexual responsiveness with age?
9. When a couple is infertile, which sex is usually responsible?
10. What are the reasons infertility is more problematic in Africa than in North America?
11. What are the advantages and disadvantages of HRT for women?
12. What are the trends in cigarette smoking in North America?
13. How much alcohol should an adult drink and why?
14. What factors in the diet affect the rate of obesity?
15. What nonfood factors affect the rate of obesity?
Chapter Guide

“I On Your Own” Activities: Developmental Fact or Myth?, Portfolio Assignment
AV: The Journey Through the Life Span, Program 8: Middle Adulthood; Transitions Throughout the Life Span, Program 20: Middle Adulthood: Biosocial Development; Development of the Adult; Adult Development
Teaching Tip: Reflecting on Your Teaching Abilities and Limitations on These Abilities

I. Senescence

**Instructional Objective:** To describe the typical pattern of biosocial development during middle adulthood, as well as age-related changes in the sexual-reproductive system.

1. **Senescence** is the general physical decline of the body that comes with aging. Everyone experiences senescence, but the rate of decline varies.

2. Two invisible aspects of aging that predict heart disease are increases in blood pressure and in LDL cholesterol. Two physiological aspects of the body that protect aging adults are organ reserve and homeostasis.

3. With age, neurons in the brain fire more slowly. In addition, by middle adulthood there are fewer neurons and synapses. As a result of these changes, reaction time slows, multitasking becomes more difficult, processing takes longer, and complex working-memory tasks may become impossible. Regular sleep becomes increasingly essential.

4. Less than 1 percent of people under age 65 experience significant brain loss with age. For those who do, the cause is usually drug abuse, poor circulation, viruses, or genes.

5. The first physical signs of aging include graying and thinning of the hair and drying and wrinkling of the skin.

6. The “middle-age spread” causes an increase in waist circumference. In addition, the muscles weaken and pockets of fat settle on the abdomen, upper arms, buttocks, and chin. By late middle age, bones lose density, making the vertebrae shrink and causing a decrease in height.

7. Agility is also reduced. The joints lose flexibility, stiffness is more evident, and bending is harder.

8. Although each of the senses becomes less acute during middle age, decline is most obvious in the two most crucial systems—hearing and vision. After age 20, the lens of the eye gradually becomes less elastic and the cornea flattens. This contributes to difficulty in seeing close objects.
9. Age-related hearing loss (presbycusis) is often diagnosed around age 60. An alarming study suggests that hearing problems may soon begin in middle age, primarily as the result of prolonged exposure to noise.

10. The aging of the body is most evident in sports that require strength, agility, and speed.

II. The Sexual-Reproductive System

**Instructional Objective:** To describe age-related changes in the sexual-reproductive system.

- AV: Sexuality and Aging; Menopause: Passage to Paradise
- Classroom Activities: The Neuroscience of Love; A Healthy Sexual Relationship at All Ages; A More Realistic Picture of Menopause; Culture, Meaning, and Menopause

1. With age, sexual arousal is slower and orgasm takes longer. Most people are sexually active throughout adulthood.

2. Fertility peaks before age 25, and from a biological perspective, women should try to conceive before age 30 and men before age 40.

3. Overall in the United States, about 15 percent of all couples are infertile. Male infertility is most often the result of a low sperm count. Female infertility may be the result of pelvic inflammatory disease. In both men and women, fertility is affected by certain diseases, smoking, extreme dieting, and obesity.

4. In the past 40 years, advances in medicine have solved about half of all fertility problems. Surgery repairs male or female reproductive systems, and assisted reproductive technology (ART) overcomes obstacles such as low sperm count and blocked fallopian tubes.

5. At an average age of 50, women usually reach menopause, as ovulation and menstruation stop and the production of estrogen, progesterone, and testosterone drops significantly. If a woman has a hysterectomy that includes removal of the ovaries, then sudden, premature menopause occurs.

6. The psychological consequences of menopause are extremely variable. Some menopausal women find new zest, while others become depressed.

7. Over the past two or three decades, many women used hormone replacement therapy (HRT) to reduce post-menopausal symptoms. Long-term use of HRT beyond menopause has been shown to increase the risk of heart disease, stroke, and breast cancer.

8. Most experts feel the term andropause (or male menopause) is misleading. Physiologically, men have no sudden shift in hormone levels or reproductive ability, although testosterone levels may drop if a man becomes sexually inactive or experiences unusual anxiety due to stresses such as financial problems, unresolved anger, dwindling social relations, or unwanted retirement.

III. Health Habits and Age

**Instructional Objective:** To increase students' awareness of the relationship of health to environmental and personal factors.

- AV: Factors in Healthy Aging; The American Alcoholic; An Easy Pill to Swallow; Women’s Health
- Classroom Activity: Why People Continue to Smoke
- “On Your Own” Activity: Good Health Habits
- Critical Thinking Activity: Substance-Related Disorders on the Internet
- Observational Activities: How Long Will You Live?; Sexism in Medicine

1. For most conditions and diseases, a person’s health habits over the years powerfully affect almost every disease and chronic condition.

2. Rates of addiction and drug abuse decrease sharply over adulthood—usually before age 25, almost always by age 40. The addictive drug in tobacco is nicotine. In North America today, fewer people begin smoking than in the past. Today, twice as many
women die from lung cancer as from cancer of the breast, uterus, or ovary. Variations in smoking rates among nations, cohorts, and the sexes demonstrate that smoking is affected by social norms, laws, and advertising.

3. The number of smokers has declined in the United States but not in most European nations, and it is even higher in many developing countries.

4. Moderate use of alcohol may lower the risk of coronary heart disease and strokes because it increases the blood’s supply of high-density lipoprotein (HDL), a protein that aids in reducing cholesterol, and decreases low-density lipoprotein (LDL). It also lowers blood pressure and glucose.

5. Heavy use of alcohol is the main cause of liver disease, increases the risk of death from many forms of cancer, contributes to osteoporosis, decreases fertility, destroys brain cells, and accompanies many suicides, homicides, and accidents. In Russia, about 50 percent of deaths of men under 60 years of age are alcohol-related.

6. Between emerging adulthood and late adulthood, a person’s metabolism slows by about a third, which means that adults need to eat less and move more simply to maintain their weight.

7. In the United States, on average, adults gain one to two pounds per year because they consume too many high-calorie foods and engage in too little exercise. The United States is the world leader in obesity and diabetes.

8. Overweight, defined as a BMI of above 25, is present in two of every three adults living in the United States. Obesity is defined as a BMI of 30 or higher. Excess weight increases the risk of every chronic disease. For example, diabetes in overweight people may result in eye, heart, and foot problems, as well as early death.

9. Explanations for the trends in becoming overweight and obese focus on diet, culture, the context of meals, exercise, and genes. Two controversial strategies for weight loss are the use of drugs and surgery.

10. The close connection between exercise and health is well known, as is the influence of family, friends, and neighborhood. Exercise reduces blood pressure; strengthens the heart and lungs; and makes depression, osteoporosis, heart disease, arthritis, and some cancers less likely.

11. (A View From Science) Our resolve in breaking bad health habits and maintaining good ones may fade when we face stress. This phenomenon is called attention myopia.

12. A stressor is an experience, circumstance, or condition that affects a person.

13. Psychologists distinguish two major ways of coping with stress. In problem-focused coping, people try to cope with stress by tackling the problem directly. In emotion-focused coping, people cope with stress by trying to change their emotions. Generally speaking, younger adults are more likely to attack a problem while older adults try to change their emotions. Women may be more emotion-focused than men, as their bodies produce the hormone oxytocin that triggers tend-and-befriend behaviors.

14. The total burden of physiological stresses that an individual must cope with is called allostatic load. When this load is large, there is increased risk of disease.

15. Weathering is the gradual accumulation of stressors over a long period of time, wearing down a person’s resilience and resistance.

IV. Measuring Health

Instructional Objective: To describe the four main measures of health and to demonstrate how knowledge of these measures enables understanding of adult health problems.

1. Immunization, monitoring the food and water supply, and other measures that help prevent morbidity, mortality, and disability, are collectively referred to as public health.
2. The best indicator of health of given age groups is the rate of mortality, or death. This rate is often age-adjusted to take into account the higher death rate among the very old. By this measure, the country with the lowest rate is Japan, and the country with the highest rate is Sierra Leone.

3. Another measure of health is morbidity, or disease, as measured by the rate of diseases of all kinds in a given population.

4. To truly portray quality of life, we need to measure disability, which refers to a person’s inability to perform normal activities; and vitality, which refers to how healthy and energetic an individual actually feels.

5. The concept of quality-adjusted life years (QALYs) indicates how many years of full vitality are lost as a result of a particular disease or disability. The reciprocal of QALYs is the concept of disability-adjusted life years (DALYs).

6. Better health and lower mortality rates are characteristic of those who are relatively well-educated and financially secure.

7. With each more acculturated generation of immigrants to the United States, health worsens. One suggested explanation of this phenomenon is that healthy people of high SES are more likely to emigrate.