

CHAPTER 9

Late Adulthood



OUTLINE

PHYSICAL DEVELOPMENT DURING LATE ADULTHOOD

- Physical development
- Health issues

COGNITIVE DEVELOPMENT DURING LATE ADULTHOOD

- Beyond Piaget's theory
- Information-processing during late adulthood

SOCIAL AND EMOTIONAL DEVELOPMENT DURING LATE ADULTHOOD

- Emotional development
- Self and others
- Psychosocial development



When does old age begin? Should this depend on chronological age or a life event such as retirement from work? Although many people maintain that old age is a state of mind, there are several life events that signal the beginning of late adulthood. These are tied to chronology, just as other life events are in previous stages of the life span.

Age sixty-five is considered a milestone and the beginning of late adulthood. Reaching this age generally brings about retirement from work, eligibility for Social Security and Medicare benefits, income tax advantages, reduced fares and admission prices to leisure events, and special purchase or discount privileges. It is projected that by the year 2020, approximately 16.5% of the population will be sixty-five years of age or older (up from 4.1% in 1900, 8.1% in 1950, and 12.4% in 2000) (Himes, 2001). This percentage is expected to increase to 20.8% by 2060.

Advances in modern medical care, better health practices, improved nutrition, and other factors keep people in better health and living longer today (Himes, 2001). For these and other reasons, the period of late adulthood can be divided into five subcategories based on age by decade (Burnside, Ebersole & Monea, 1979). Please note that originally there were only four subcategories; however, the category of centenarians has been added due to an increasing number of people living past one hundred. These subcategories are described below. Neugarten (1978) was among the first to recognize that not all individuals in late adulthood are disabled or feeble. These age divisions help to create a more realistic and positive impression of the elderly. Upon reading about them, you may conclude correctly that late adulthood comprises a diverse group of individuals. In this respect, it is like every other stage discussed in this text.

The young-old (sixty to sixty-nine years): Society expects people in their sixties to have less energy, responsibility, and independence in adulthood. This expectation demoralizes people and serves as a self-fulfilling prophecy. True, physical strength declines from earlier periods of the life span. Despite this limitation, many individuals in this age bracket are energetic, active in volunteer work, pursue hobbies and interests, lead vigorous lifestyles, and are in a state of good health (Kovar, 1986a, b; Kovar & LaCroix, 1987; Ries & Brown, 1991). Release from work and financial responsibilities gives them the chance to redirect their energies to activities that please them. Self-improvement, sometimes even in the form of entrance into college degree programs, is actively pursued by many people this age.

The middle-aged old (seventy to seventy-nine years): Losses characterize this decade. Deaths of spouses and friends occur more frequently. Health problems become a preoccupation and restrict activities within and outside the home, which can further shrink a person's social world. A significant challenge for people in their seventies is to retain the reintegration of personality accomplished following retirement.

The old-old (eighty to eighty-nine years): People in this age bracket find it increasingly difficult to adapt to the effects of the advanced aging process. Housing and physical space are often obstacles to effective living. People in their eighties become more preoccupied with their memories and interested in relating their past living experiences to others. Health problems become more frequent, severe, and of longer duration. Some people need to be cared for by others, which could be within a family member's home, a nursing home, or some other supervised living situation.

The very old-old (ninety to ninety-nine years): There are far fewer people in this age bracket, so we have very little accurate information about them. Obviously, health problems play a central role in their lifestyles. People in their nineties have very limited physical and social activity, but they appear to be happy, serene, and fulfilled (Bretschneider & McCoy, 1988).

Centenarians (one hundred years and older): Centenarians are a particularly hardy and diverse group of individuals (Duenwald, 2003). They are known for their positive dispositions and lower rates of chronic illness and age-related disabilities that plague their younger, elderly peers. More women than men live to be one hundred; however, men tend to maintain greater health and mental capacity. Although many centenarians avoided smoking and obesity throughout life, others live to be one hundred or more despite suboptimal nutrition, little exercise, environmental toxins, and poor lifestyle choices (such as smoking). A few common themes among centenarians include remaining emotionally close and involved with loved ones throughout life, achieving financial security, and staying mentally active (e.g., reading, writing, and cross word puzzles). Such extreme longevity seems to run in families, hinting that genetics may play a role. Researchers hope to identify the genetic factors that promote such longevity in order to develop drugs that will mimic these genetic effects in others.

There are more women than men in all of the subcategories of late adulthood (Himes, 2001). This difference is because men have higher mortality rates than

women throughout life. In general, for every one hundred girls born, one hundred and five boys are born (of course, sex-selection during IVF or abortion can skew these numbers). However, by the age of eighty-five there is a 41:100 ratio—that is for every one hundred women, there are only forty-one men. In general, women can expect to outlive their husbands.

There are also some ethnic differences in terms of the elderly population (Himes, 2001). During the 2000 census, 84% of all elderly people were white, non-

Hispanic. However, it is projected that the elderly population will become more ethnically diverse over the next fifty years, with 64% of the elderly population being considered white, non-Hispanic. It has been speculated that barriers to health care have contributed to earlier mortality rates for African American and Hispanic individuals. Improved access to health care, fertility rates, and immigration will all play a role in the increased diversity of the elderly population in the years to come.

PHYSICAL DEVELOPMENT DURING LATE ADULTHOOD

LEARNING OBJECTIVES:

1. Describe physical development during late adulthood
2. Awareness of health issues in late adulthood

PHYSICAL DEVELOPMENT

The vast majority of physical changes observed during late adulthood are closely related to the process of advanced aging. Physical functioning and daily activities are curtailed as the organ systems degenerate. Many of the symptoms of organ degeneration appear prominently in middle adulthood, but they become even more pronounced as people progress through late adulthood.

Senescence

The process of aging.

The aging process in late adulthood is termed **senescence**. The general effects of aging combine to make the body's organ systems work less efficiently. For quite a while, people can compensate for the declining efficiency of their organs and the body in general, but the decline becomes dramatic later in this stage.

Collagen

A fibrous protein that is a basic component of connective tissue.

The discussion of theories of aging in **chapter eight** indicated that various causes have been proposed for aging in human beings. Although no one factor has been identified as being solely responsible for the aging process, researchers note that changes in **collagen** closely parallel changes throughout the body and are associated with the aging process (Spence & Mason, 1987; Timiras, 1972). Collagen, a fibrous protein that is a basic component of connective tissue, is found throughout the body. It is characterized as a large molecule having

Spotlight

3. What does senescence mean?

elastic properties. The flexible nature of collagen allows muscles, blood vessels, tendons, and other organs to transmit tension and experience compression without becoming deformed. We would not be able to move about in a normal way without this important molecule.

The effects of aging may be closely related to the loss of collagen's elastic properties. This can be observed throughout the body. Calcium salts, for example, begin to be deposited in tissues as people advance in age during middle and late adulthood. This substance contributes to arteriosclerosis or "hardening of the arteries," a condition that causes hypertension, related circulatory system disorders, and eventually death. Collagen changes in heart muscle tissue reduce the ability of this organ to perform properly.

Changes in Weight and Height

The loss of weight in men that begins in middle adulthood continues through late adulthood. Elderly women begin to lose weight in gradual increments during this stage. Decreasing physical activity, less food consumption, lower metabolism, poorer health, and related factors result in a reduction of muscle and tissue mass and hence weight.

Reductions in weight also continue into late adulthood for both men and women (Abraham, 1979; Hegner, 1991). This loss in height is caused by compression of the spinal column and the softening of muscle and bone tissue. The changes also result in the characteristically stooped posture, with the head held forward and down from the body, seen in older people.

Changes in Bodily Systems

As the body declines in physical functioning, numerous changes are occurring in bodily systems.

THE TEETH Total loss of teeth occurs in a sizable minority of people between the ages of sixty-five and seventy-four (Cassel, 1990; Kelly & Harvey, 1979). Advanced age is associated with a higher incidence of periodontal disease and **gingivitis**, inflammations of gum tissue that contribute highly to tooth loss. Many of the dental problems of old age, however, are the result of earlier neglect.

Dental problems contribute to poor eating habits that lead to malnutrition. Some elderly people do not get dentures to replace missing teeth for financial reasons; others have poorly fitting dentures. As a result, they may eat only foods that are easy to chew, eliminating many vegetables, fruits, and meats from their diet.

THE MUSCULAR AND SKELETAL SYSTEMS The ability to move about becomes more restricted as aging advances because of changes in muscle and bone functioning. **Muscles atrophy, reducing strength and restricting movement. Loss of elasticity in muscle tissue reduces flexibility, causing stiffness.** Osteoporosis leads to easier bone breakage, **kyphosis** ("humpback" posture), and **scoliosis** (S-curved spinal column). Back pain increases in frequency and intensity, reflecting deterioration of the vertebrae (Hazard, 1990; Meuleman, 1989; Spence & Mason, 1987).

Gingivitis

Inflammation of gum tissue that contribute highly on tooth loss.

Kyphosis

A "humpback" posture.

Scoliosis

S-curved spinal column.

Gout

A metabolic disorder that results from uric acid crystals forming at joint areas, especially in the feet.

Arthritis and rheumatism are the most prevalent musculoskeletal disorders among the elderly. Other conditions that often cause disability or discomfort at this stage are muscle cramps, bursitis in the shoulder or elbow, and **gout** (a metabolic disorder that results from uric acid crystals forming at joint areas, especially in the feet).

THE CARDIOVASCULAR SYSTEM

The effects of aging on the heart and blood vessels that became increasingly apparent in middle adulthood worsen in late adulthood. There is further accumulation of fatty material in the heart muscle and in the arteries (atherosclerosis), the heart valves thicken, and arteriosclerosis (hardening of the arteries) becomes more pronounced (Schrier, 1990; Spence & Mason, 1987). These conditions cause higher blood pressure, extra stress on the heart, and related cardiovascular problems, although regular exercise has been found to be beneficial in maintaining cardiovascular responsiveness (Thompson, Crist & Osborn, 1990; Van camp & Boyer, 1989).

Decreased cardiac output further jeopardizes the health and well-being of the elderly (Spence & Mason, 1987). The slower heart rate of older people results in a decreased level of oxygen in the blood, which is why elderly people tire more easily and cannot endure stress as well as younger people.

Coronary heart disease increases steadily during late adulthood. It is a leading cause of death at this stage of life. Coronary heart disease stems from a diminished supply of oxygen to the heart muscle through the blood caused by hypertension, atherosclerosis, or coronary aneurysm (ruptured blood vessel in the heart muscle). Over a long period of time, it can lead to heart attack or congestive heart failure.

THE RESPIRATORY SYSTEM The lungs have lowered capacity for inhaling and exhaling air in late adulthood (Horan & Brouwer, 1990; Spence & Mason, 1987). There are three causes of this reduced capacity. First, a change in collagen composition of the lungs causes them to become less elastic and thus less capable of expanding and contracting. Second, the diaphragm and chest muscles that help expand and contract the chest weaken. Third, age-related conditions such as scoliosis reduce chest capacity.

Among the most common serious respiratory conditions among the elderly are cancer of the lungs, **emphysema**, and **pneumonia**. Lung cancer increases considerably during late



Muscular and skeletal systems become more restricted.

Emphysema

A condition involving destruction of lung tissue that results in lowered lung elasticity.

Pneumonia

An inflammation of the lungs.

adulthood; it is associated with chronic conditions such as smoking, pollution, and occupational hazards. Emphysema is a condition involving destruction of lung tissue that results in lowered lung elasticity. People with emphysema have difficulty breathing and moving about freely. Pneumonia is an inflammation of the lungs. It increases in incidence in old age because of decreased lung efficiency, poor circulation, and lowered resistance to infection. Pneumonia is a particular risk for an elderly person who is bedridden for an extended period of time because physical inactivity prevents the lungs from clearing themselves.

THE DIGESTIVE SYSTEM Digestive problems generally increase through adulthood (Spence & Mason, 1987). In old age, the most commonly reported digestive disorders are constipation, hernia, gallbladder conditions, gastritis (heartburn), and diverticulitis (Drury & Howie, 1979; Whitehead, Drinkwater & Cheskin, 1989).

Constipation and hemorrhoids are frequent complaints of the elderly. Their concern with not having a regular daily bowel movement may be more of a matter of socialization than a true effect of aging, however. Of greater concern for many elderly individuals is the high rate of hemorrhoids and the reliance on laxatives to produce regular bowel movements. This often is related more to dietary practices than to the aging process as well. These conditions may be controlled by adding more fiber to the diet in the form of grain bran, fresh fruits, vegetables, and nuts or by taking dietary supplements containing fiber (Hazard, 1990). In general, between twenty and thirty grams of dietary fiber should be consumed by adults daily for effective control of constipation and hemorrhoids.

Hiatal hernia, a condition in which a portion of the stomach slides up next to the esophagus, is common among the elderly, especially among overweight or obese individuals. Hiatal hernia causes indigestion, gastritis, chest pain, and difficulty in swallowing. It can be treated with therapeutic methods or surgery if severe.

Diverticulitis is an inflammation of a portion of an intestine that causes pain, nausea, and a change in bowel habits. It is usually treated without surgery, unless the affected area of the intestine perforates or ruptures.

Gallbladder problems in old age usually involve gallstones or inflammation of the gallbladder. The gallbladder stores bile from the liver. Gallstones sometimes form from insoluble substances in the bile. They don't cause serious problems unless they block the duct leading from the gallbladder to the intestine. "Gallbladder attacks" are very painful, however, and may be accompanied by nausea and vomiting.

THE GENITOURINARY SYSTEM Elderly people are susceptible to a variety of disorders in the reproductive organs and the urinary system (kidneys, bladder, and urethra) (Schrier, 1990; Spence & Mason, 1987). As people age, there is a decrease in the blood flow through the kidneys as well as a gradual decrease in the kidneys' efficiency to remove wastes from the blood. Among people of advanced age, urinary **incontinence** (the inability to retain urine in the bladder until voluntarily released) is a very real and embarrassing problem (Ruff & Reaves, 1989).

These changes bring on certain conditions that affect the functioning of the urinary system. Men commonly experience enlargement of the prostate gland, which causes

Hiatal hernia

A condition in which a portion of the stomach slides up next to the esophagus.

Diverticulitis

An inflammation of a portion of an intestine that causes pain, nausea, and a change in bowel habits.

Incontinence

The inability to retain urine in the bladder until voluntarily released.

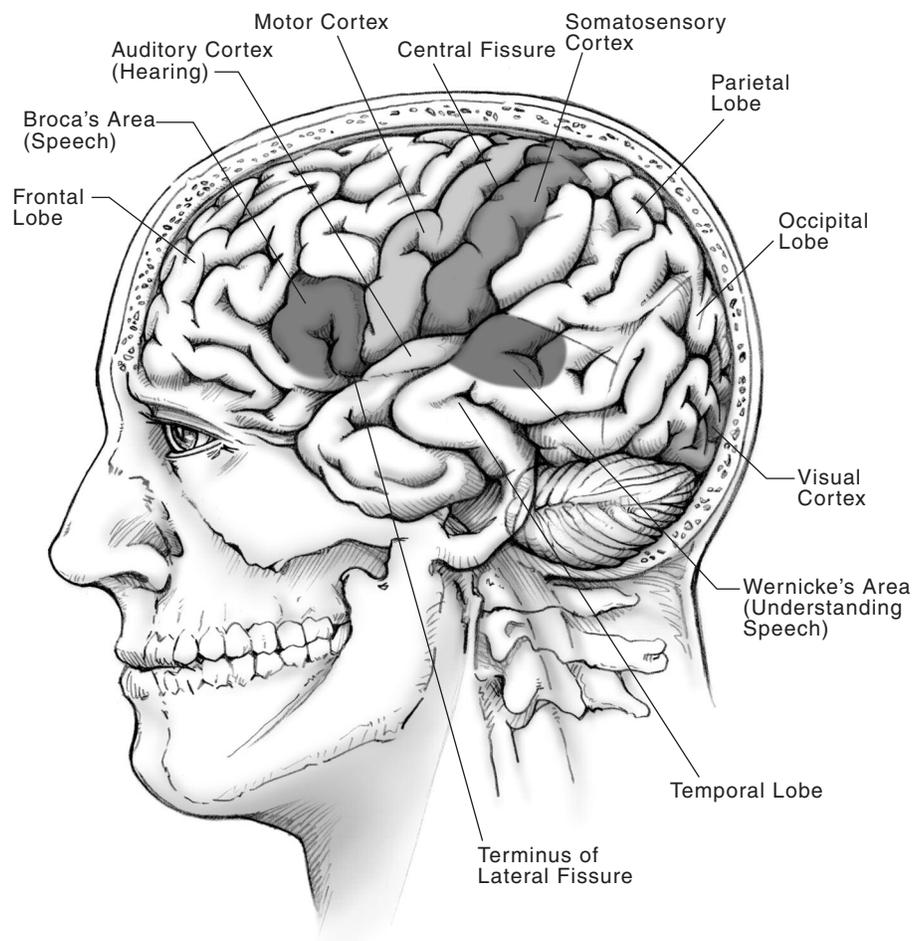
blockage of the urine flow. This encourages bladder infections and other complications. The most common types of cancer affecting this system in elderly men are cancer of the bladder and of the prostate gland.

Women have more urinary system problems than men throughout life. Bladder infections, such as cystitis, are frequent. In late adulthood, women are at increased risk for problems of the vaginal area, prolapsed uterus, and cancer of the cervix, vulva, and breasts. Breast cancer is a leading cause of death among elderly women (U.S. Bureau of the Census, 2000).

THE BRAIN AND CENTRAL NERVOUS SYSTEM Several developmental changes in the brain and central nervous system are related to advanced aging (Albert & Killiany, 2001; Spence & Mason, 1987; Vinters, 2001). First, the speed of nerve cell transmission slows with age. Second, brain and nerve cells diminish in number. These two factors, plus decreased transmission of oxygen to the brain, produce the slowing in reaction time that is commonly observed among elderly individuals.

Reaction time affects perception and memory as well as the soundness of various reflexes. Progressively slower reaction times endanger the safety of the elderly people,

FIGURE 9-1 LOCALIZATION OF CORTICAL FUNCTIONS IN THE FOUR LOBES OF THE LEFT CEREBRAL CORTEX



especially when they are driving. Many states now require extra testing for issuance of driver's licenses to the elderly.

Reduced availability of oxygen to the brain can contribute to other conditions that are troublesome to elderly individuals. Sleep disturbances, memory difficulties, and general irritability are related to decreased cerebral blood flow and to changes in the biochemical functioning of the brain in old age (Pollak, Perlick & Linsner, 1990). Insomnia is a frequent complaint among the elderly (Cassel, 1990). There is a general trend to need less sleep as age increases. A newborn infant may sleep about sixteen hours daily, whereas school-age children sleep about ten hours, and adults about eight. Elderly people may be able to sleep only five hours or so a night.

CHANGES IN SENSATION, PERCEPTION, AND MOTOR SKILLS The ability to adjust and adapt in late adulthood partly depends on the capacity to receive and process information gained through the senses. Elderly people experience sensory deprivation as the sensory organs and the area of the brain that regulate them decline in efficiency. This deprivation has enormous implications for mental alertness and contact with reality.

Vision Age-related changes in vision during late adulthood include an increase in the threshold of light needed to stimulate retinal cells; a decrease in acuity (sharpness of vision) due to changes in the lens, pupil size, and accommodation (focusing ability); and a decrease in adaptation to dark and light environments (Fozard & Gordon-Salant, 2001; Saxon & Etten, 1978; Spence & Mason, 1987).

Elderly people can expect to experience several eye disorders that can limit visual ability: “specks” in a visual field due to loose cells floating within the vitreous humor of the eyeballs; cataracts; glaucoma; **macular degeneration**, or a decreased blood supply to the retina, causing loss of visual sharpness when looking directly ahead but not in the peripheral vision areas; and drooping eyelids. The risk of blindness increases considerably after age sixty, often because of glaucoma.

Hearing Perhaps the most significant sensory change during late adulthood is hearing loss. It sometimes leads to a complete withdrawal from social interaction. Hearing handicaps increase considerably with age (Rowland, 1980; Spence & Mason, 1987). About half of all people older than sixty-five have some hearing loss. These losses occur earlier in men than women, perhaps because men were more likely to be exposed to hazardous noise on the job.

The loss of hearing for high-frequency sounds that was first noticed during middle adulthood continues. Loss of hearing in the mid to low-range frequencies becomes more likely with age. Many elderly people become deaf because of damage to the cochlea hair cells, hardening of the bones, and nerve damage to the structures of the inner ear that transmit sound waves to the brain (Fozard & Gordon-Salant, 2001).

Taste and smell Taste and smell perception decline in old age. Many elderly people remark that food tastes bland, and season it heavily with salt, pepper, and other condiments to improve its flavor. This loss of taste is attributed to a decrease in the number of taste buds and to the need for stronger stimulation to taste receptors in the mouth.

Macular degeneration

A decreased blood supply to the retina, causing loss of visual sharpness when looking directly ahead but not in the peripheral vision areas.



Hearing loss is the most significant sensory change during late adulthood.

People do not smell odors as well in late adulthood. This is because of a decrease in the number of nerve fibers in the nose (Saxon & Etten, 1978; Spence & Mason, 1987). This decline has important safety implications. Elderly people sometimes cannot easily smell food that has burned during cooking or smoke from a house fire.



Pause and Process:

1. Why do people see a decrease in height in late adulthood?
2. How do the senses decline in late adulthood?

HEALTH ISSUES

The majority of elderly people are in relatively good health (Kovar, 1986a); although they usually have one or more chronic conditions that require medical attention (DeLozier & Gagnon, 1991). The most common complaints are cardiovascular disease, hypertension, arthritis, hearing impairment, cataracts, glaucoma, and lower back problems.

Elderly people also experience acute illnesses, but less frequently than younger people (U.S. Bureau of the Census, 2000). However, when they do get an acute illness such as influenza, it tends to be more severe and of longer duration than it is among younger people. Elderly people are hospitalized for illness more frequently than younger individuals. Medical expenses play a major role in elderly people's budgets.

Nutritional Needs

The relationship between diet, exercise, and health continues to be strong in late adulthood (Goodwin, 1989; Leventhal et al., 2001). Nutritionists note that many health problems are

related to the diets and eating habits of elderly people. These include a lower resistance to disease (Chavance, Herbeth & Fournier, 1989), poor absorption of nutrients (Knox, Kasarkian & Dawson-Hughes, 1991), elevated blood pressure (Lowik, Hoffman & Kok, 1991), and dehydration (Post, 1990). Additionally, diets that are high in fat and protein increase a person's risk for several types of cancer, including colon, uterus, breast, prostate, kidney, and pancreas (Perls, 1999). To decrease a person's risk for developing cancer or heart disease, a diet should emphasize fruit and vegetable consumption.

A NUMBER OF FACTORS WORK AGAINST ADEQUATE NOURISHMENT OF THE ELDERLY declining health and general well-being; tooth loss that affects the ability to chew many foods; declines in the senses of taste and smell that affect the enjoyment of food; inadequate fixed incomes that force people to lower food expenditures; physical disabilities that limit shopping and meal preparation; forgetting to eat meals; and loss of appetite (Cain, Reid & Stevens, 1990; Goodwin, 1989; Horwath, 1989; Zheng & Rosenberg, 1989).

Many elderly people erroneously believe they are eating a balanced diet (Fischer, Crockett & Heller, 1991) because they have many misconceptions about nutrition. Malnutrition is not uncommon in late adulthood for this reason (Davies & Carr, 1991). Community nutrition programs promote improved nutrition among the elderly. These services, such as Meals on Wheels, are particularly helpful for the disabled elderly (Manning & Lieux, 1991).

Vitamin and mineral supplements alleviate some nutritional problems among the elderly and improve health (Daly & Sobal, 1990; Perls, 1999). For example, vitamin E is an antioxidant and is believed to impede the development of stroke, heart disease, and Alzheimer's. Selenium is believed to inhibit some forms of cancer. Fiber is thought to have numerous benefits including lower rates of colon cancer and cholesterol.

Common Illnesses and Disorders

We have already covered many of the common illnesses previously in the [chapter](#) in regards to the decline and deterioration in the functioning of physical systems. However, we have yet to discuss cerebrovascular accidents, or strokes. **Strokes** are a leading cause of death among elderly people (Spence & Mason, 1987). A stroke occurs when a blood clot forms and causes a blockage in the amount of blood reaching the brain (Lewis, 1990; Spence & Mason, 1987). The clot can form in an artery of the neck or in the brain. When it does, brain tissue dies from lack of oxygen. An **aneurysm**, or rupture of an artery wall within the brain, can also cause a stroke. In this case, the blood clot forms within the brain.

The severity and damage to the stroke victim's brain varies according to where the hemorrhage or blockage occurred. Some people are only minimally affected; others experience various degrees of paralysis, loss of motor functioning, speech, or combinations of these effects. These effects may or may not last for a lengthy period depending on the severity of injury to brain tissue.

There are some early warning signs for a stroke (Saxon & Etten, 1978). A person may experience sudden, temporary weakness or numbness in the face, arm, or leg. He or she may temporarily have difficulty in speech or vision. Further, a person may experience

Strokes

A cerebrovascular accident occurring when a blood vessel in the brain ruptures or is obstructed by a blood clot.

Aneurysm

A rupture of an artery wall within the brain.

unexplained headaches, dizziness, or a change in personality or mental ability. Most people who have had a stroke in the initial years of late adulthood can expect a limited recovery through occupation, physical, and other kinds of therapy (Lewis, 1990). Occupational therapy is helpful, for example, in assisting stroke patients to develop new patterns of functioning within living environments.

Senility

Marked deterioration in mental organization characterized by confusion, memory loss, information-processing difficulties, and disorientation.

Dementia

A type of organic brain syndrome that is a neuropsychiatric disorder related to brain cell impairment.

Acute

A form of organic brain syndrome that is reversible in many cases.

Chronic

A form of organic brain syndrome that is not reversible.

MENTAL HEALTH One of the greatest fears people have about growing older is that they will lose their mental capacities—in popular terms, become senile. **Senility** is a catch-all term for what many believe are the inevitabilities of old age: loss of mental and emotional abilities to relate to reality, helplessness, and incontinence (Cook & Miller, 1985). Senility is technically referred to as dementia. There are numerous non-Alzheimer dementias that vary in cause and symptoms (Vinters, 2001).

Dementia is a global term for a variety of an organic brain disorders related to brain cell impairment (Vinters, 2001). The symptoms of these disorders can include disorientation to time, place, and/or people; memory loss; disturbances in thinking, especially in abstract thinking and reasoning; impairment of judgment; or inappropriate emotional responses (Saxon & Etten, 1978). Symptoms may appear slowly or rather suddenly.

These symptoms are often regarded as idiosyncrasies of the elderly. Actually, people showing these signs are experiencing a type of mental illness that until recently was thought to be always irreversible. Organic brain syndrome occurs in two forms: (1) **acute**, which is reversible in many cases; and (2) **chronic**, which is not reversible. Acute brain syndrome responds to treatment that is directed toward correcting malnutrition, inflammations and infections, and various chemical imbalances in the body. Chronic brain syndrome is permanent and is responsible for many of the mental disorders associated with late adulthood.

One of the more commonly known chronic organic brain disorders is **Alzheimer's disease**. This degenerative disease is an area of active research (Vinters, 2001). Although symptoms can appear during middle adulthood, this condition is much more common



Alzheimer's disease can begin in middle adulthood but is much more common after the age of sixty-five.

Alzheimer's disease

A degenerative chronic brain disorder occurring commonly in late adulthood. It is characterized initially by forgetfulness, later by serious cognitive dysfunction; and eventually by complete loss of mental functioning and death.

after age sixty-five. Although genetics play a role, many other factors may also influence the onset of Alzheimer's disease.

People with Alzheimer's disease seem to follow a certain course. The first sign of the condition is usually forgetfulness. Individuals cannot easily remember where objects are and their short-term memory of recent events is impaired. The next phase is characterized by impaired cognitive functioning. The person is confused, makes inappropriate and irrational decisions, and displays bizarre or eccentric behavior. The final phase is characterized by dementia. The person shows severe disorientation, behavior problems are recurrent, and rage reactions can be common. People in this phase can wander off and become lost or are unable to recognize where they are. Eventually, physical functions diminish so much that people with Alzheimer's disease are unable to provide for their own care and need constant supervision. Death may result from an infection such as pneumonia.

Although Alzheimer's disease is currently considered irreversible, researchers continue to test new drugs and methods to help people cope with its symptoms (Cassel, 1990; Cohen, 1987). Treatments to improve memory include drugs. Researchers are also studying the levels and types of neurotransmitters in the brain and experimenting with ways to alter or improve these.

Many elderly people with Alzheimer's disease eventually need around the clock care. This care can be either provided in the home by loved one's and/or hired nursing staff, or the care can take place in a convalescent home. Care in a twenty-four hour nursing home is costly to families both emotionally and financially. Alzheimer's disease has a devastating effect on the individual experiencing it, but it is also extremely difficult for family members who must watch this physical and psychological deterioration in a loved relative. Religiosity can help family members cope, as they believe that suffering is a process that unites them to Christ and brings them closer to God. There are also support groups devoted to helping family members cope with a loved one's Alzheimer's disease.

Another degenerative brain condition commonly observed in late adulthood is **Parkinson's disease** (National Parkinson Foundation, 2009; Spence & Mason, 1987). It occurs nearly equally in men and women. Like Alzheimer's disease, Parkinson's disease involves brain cell impairment or death over a long period of time that eventually results in the person's death. More specifically, Parkinson's disease is the result of cell impairment and death in the substantia nigra area of the brain. These cells produce the neurotransmitter **dopamine**, which is responsible for smooth and coordinated movement of the muscles in the body. Surprisingly, it is not until 80% of these cells have become impaired or died that an individual begins to show the symptoms of Parkinson's disease.

Parkinson's disease is characterized by tremors (shaking) that spread slowly throughout the entire body, sluggish movement, muscle weakness, rigidity, and a peculiar walking gait (National Parkinson Foundation, 2009; Spence & Mason, 1987). Speech becomes slurred and muffled as the disease progresses. Facial expressions may become stiff and handwriting is small and restricted. Depression is also sometimes experienced by individuals with Parkinson's disease.

Currently, it is estimated that 1.5 million Americans suffer from Parkinson's disease (National Parkinson Foundation, 2009). There are nearly sixty thousand new cases diag-

Parkinson's disease

A chronic degenerative brain disorder commonly occurring in late adulthood. It is characterized initially by tremors, muscle weakness, and a peculiar gait; then speech becomes slurred; death eventually results from severe brain cell damage.

Dopamine

A neurotransmitter that is responsible for smooth and coordinated movement of the muscles in the body.

Spotlight

9. Where are somatic stem cells obtained from?

Embryonic stem cells

Stem cells obtained from human embryos that result in the death of the embryo.

Adult stem cells

Stem cells obtained from patients or donors found in numerous tissues and organ systems, even fat.

Umbilical cord blood and placental stem cells

Stem cells found in the umbilical cord blood and placenta after birth.

Amniotic fluid stem cells

Stem cells found in amniotic fluid.

Somatic stem cells

Another term for adult stem cells.

Equipotentiality

The ability for a cell to develop into any type of cell in the body.

nosed each year. Around 85% of diagnosed cases are in individuals older than the age of sixty-five. There is no cure for Parkinson's disease; however, medications that replace or mimic dopamine can be helpful in decreasing the symptoms.

It is difficult to discuss Parkinson's disease and not discuss the issue of stem cell research. This is a topic of much controversy in America today. Sadly, most people engaged in the debate are poorly educated about the types of stem cells and what has been accomplished with this research so far.

A stem cell can be defined as a cell “capable of becoming another more differentiated cell type in the body ... they can be used to replace or even heal damaged tissues and cells in the body” (stemcellresearchfacts.com, 2009). There are **embryonic stem cells**, umbilical cord blood stem cells, amniotic fluid stem cells, and **adult stem cells**. The controversy involves embryonic stem cells from which a human embryo must die in order to obtain the initial cells (Elizabeth Johnson, MD, personal communication, 2008). They can also be obtained from miscarried or aborted fetuses. Alternatively, adult stem cells can be obtained from bone marrow, fat, the olfactory bulb, or reprogrammed skin cells without causing any harm to the donor. **Umbilical cord blood and placental stem cells** can be obtained after the birth of a child; and **amniotic fluid stem cells** can be obtained through methods similar to amniocentesis. **Stem cells from adults, umbilical cord blood, and amniotic fluid can be grouped under the umbrella term of somatic stem cells**—allowing them to be easily differentiated from embryonic stem cells (stemcellresearchfacts.com, 2009). Hence, there are many ways to obtain stem cells, of which one is controversial and morally reprehensible to a sizable segment of society.

Some researchers have zeroed in on the use of embryonic stem cells in the development of treatments due to their ability to proliferate and differentiate into many types of cells—referred to as **equipotentiality** (Perin, Geng, & Willerson, 2003). However, in recent years, adult stem cells from the skin have been reprogrammed to have the same equipotentiality. Additionally, some stem cell types in the bone marrow and umbilical cord also show this flexibility (stemcellresearchfacts.org, 2009). Hence, it may be possible to avoid the whole moral and ethical controversy of embryonic stem cells by utilizing certain somatic stem cells instead.

Beyond the ethical/moral debate, there are other reasons that somatic stem cells may be preferable to embryonic stem cells (Elizabeth Johnson, MD, personal communication, 2008; stemcellresearchfacts.com, 2009; The Coalition for Research Ethics, 2008). These are highlighted in **Table 9-1 below**:

Given the recent breakthrough's using somatic stem cells, it is the hope of many researchers that the debate and controversy of embryonic stem cell research can subside, and more energy and money can be spent on the more fruitful research with somatic stem cells. The question is if taxpayer dollars will indeed be spent funding the research that has produced results in treatments and cures, or if the money will be given to research that has (as of press time) produced only tumors and tissue rejection.

One final aspect of mental health in late adulthood that must be mentioned is suicide. When people think of suicide, it is typically the image of a teenager tragically taking their own life. Statistically, however, elderly white males have a higher suicide rate than any other age group (Sahyoun, et al, 2001). This rate has increased dramatically in recent

TABLE 9-1 TWO TYPES OF STEM CELLS

EMBRYONIC STEM CELLS	SOMATIC STEM CELLS
Difficult to induce growth into the desired cell type or tissue	Some have already begun specialization, so inducing growth into the desired cell type or tissue can be easier
Immunogenic—because the cells come from embryos or fetuses with their own unique DNA, rejection of this donor tissue by the recipient is likely	Not immunogenic—if the stem cells are harvested from the recipients own body (e.g., skin, fat, bone marrow, etc.), rejection is not an issue.
Tumorigenic – tend to produce or promote growth of tumors due to difficulty in controlling their proliferation and growth	Nontumorigenic – Tend not to produce or promote growth of tumors because it is easier to control their growth
No current disease treatments or cures have been developed using embryonic stem cells	Several dozen diseases have been treated or cured using somatic stem cells, including certain cancers, autoimmune diseases, cardiovascular diseases, ocular disorders, immunodeficiencies, neural degenerative diseases and injuries, blood disorders, metabolic disorders, liver disease, and other wounds and injuries.

years, with a 25% jump between 1981 and 1997. Mental health professionals are working to address this growing problem among the elderly.

PROMOTING WELLNESS Although health behaviors earlier in life have set an elderly person on a certain course, there are still some behaviors that older adults can adopt to improve health and increase longevity. Although sleep becomes difficult in older adulthood, sleeping an average of seven to eight hours can improve mental health and ability (Shoenborn & Danchik, 1980). Not skipping breakfast, controlling weight, and exercising are other activities that improve health. In general, the same health behaviors that are recommended throughout life still apply in late adulthood.



Pause and Process:

1. What causes a stroke?
2. Compare and contrast embryonic stem cells and somatic stem cells.

COGNITIVE DEVELOPMENT DURING LATE ADULTHOOD

LEARNING OBJECTIVES:

1. Characterize the cognitive development during late adulthood

2. Describe information-processing during late adulthood
3. Explain changes in language during late adulthood

Elderly

The term describing individuals in late adulthood who are 65 years of age or older.

Late adulthood

The eighth stage of the life span and final stage of adulthood; traditionally, the stage begins at age 65 or retirement from the work force and continues until near-death.

Ageism

Unreasonable or irrational beliefs about aging and older individuals.

Gerontophobia

The unreasonable and irrational fear of the elderly; related to ageism.

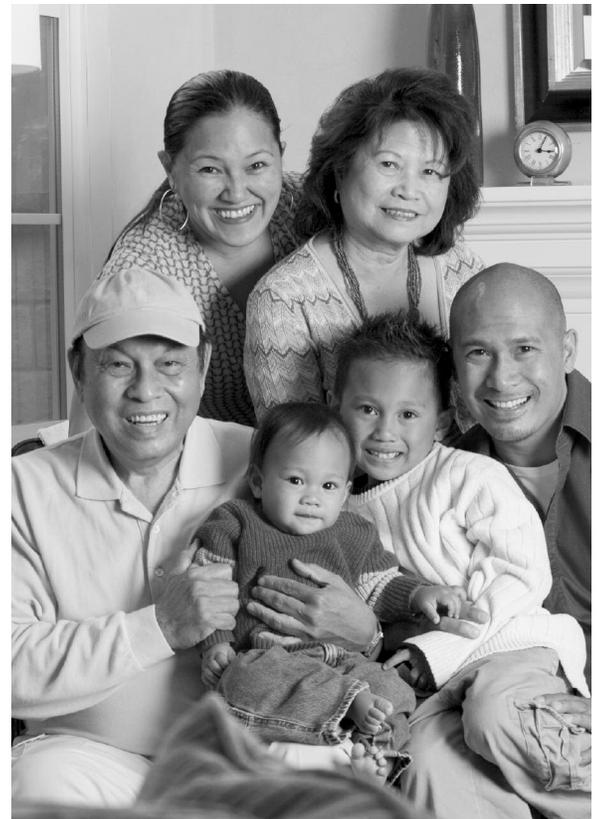
Late adulthood is the stage of life in which people are known as the **elderly**. This period of the life span is characterized by declines that occur in association with advanced aging in almost all aspects of development. Old age, or **late adulthood**, extends from age sixty-five until the processes of dying and near-death are initiated. Surprisingly, to many, this stage of the life span is a dynamic period with unique challenges and problems.

Our culture generally promotes youthfulness. No one, we are told, really looks forward to old age or wants to grow old; instead, it is an unfortunate consequence of being human. Our impressions of aging and the aged are based on misleading information and are largely negative, and often times, false. In fact, many individuals look forward to growing old with their spouse and seeing their grandchildren and great-grandchildren born.

Social scientists refer to this negativism about aging and the elderly as **ageism** (Neugarten, 1970) or **gerontophobia** (Kuhn, 1978). Both terms describe an attitude toward the elderly and the aging process that is at best indifferent and at worst unreasonable and filled with irrational fear. This attitude is due in part to historical influences, segregation of the elderly, and lack of positive in-depth experiences with them.

Asian cultures have had decidedly different beliefs about this part of the life span (Martin, 1988). **In many of these cultures, such as Japan and Korea, the extended family was the traditional family form, with three or more generations living together in a household.** Today, however, the Western model seems to be infiltrating these cultures. Many elderly people no longer expect to live with their children. The Western practice of putting infirm elderly people into nursing homes is no longer unthinkable in many Asian cultures. Most are grappling with the same issues Western cultures face. The elderly group is growing, both numerically and as a percentage of the population, in most advanced societies of the world.

Nevertheless, attitudes about aging and the elderly may be becoming more positive because longevity statistics have convinced younger people that they are likely to survive to an advanced age themselves. Certain structural changes are contributing to this change in thinking. We are



In Asian cultures it is common to have three or more generations living together in a household.

no longer a “frontier” society where youth is valued for providing the strength, energy, and force needed to build civilization and industry. We are an advanced society, and thus more ready to appreciate the leadership and wisdom of older people.

Late adulthood presents some formidable challenges to maintaining an active, stimulating mental life. Change in the ability to process information place people of advanced age at a disadvantage, though most are able to compensate for these losses in functioning. Moreover, most elderly people do not suffer from an organic brain condition, which is the prime factor limiting or terminating developmental progress.

BEYOND PIAGET’S THEORY: COGNITIVE DEVELOPMENT DURING LATE ADULTHOOD

Optimization and Compensation

Selection, optimization, and compensation (SOC) theory

A theory that examines how selection, optimization, and compensation assist individuals in coping with the declines associated with aging. It is often considered a theory of successful aging.

In [chapter eight](#) we learned about selection, **optimization, and compensation theory (SOC theory)**, which stresses that adaptive aging involves maximizing gains and minimizing losses (Baltes, Lindenberger & Staudinger, 1998). Selection refers to the process of choosing appropriate goals. These goals can be behavioral, cognitive, or socioemotional in orientation. Optimization refers to the attention, energy, effort, and persistence given to achieving the selected goal. In optimal conditions, the goal is to achieve one’s highest level of ability. Compensation involves mobilizing necessary resources to achieve the goal, particularly in the face of losses or decline. As an individual ages, there is a shift in energy from growth to maintenance and regulation of decline in abilities.

Research using the SOC theoretical framework has found that the focus of goals shifts with age (Freund, 2006). Freund (2006) conducted a study to compare the performance of young adults and older adults in regards to commitment and achievement when performing a sensorimotor task on a computer. The sensorimotor task had two conditions: an optimization condition and a compensation condition. In the optimization condition the stated goal was to perform the task as well as possible. In the compensation condition the stated goal was to prevent losses/decline in the task. Young adults showed greater persistence and motivation in the optimization task, whereas older adults showed greater persistence and motivation in the compensation task. This study supports the idea that goal focus and motivation shift with aging.

Wisdom

Wisdom is not a well-defined or well-understood concept. In fact, until recent years it was a topic that was considered more in the realm of philosophy or theology than psychology. However, wisdom is an area of research that is gaining popularity in human development. Although there is no agreed upon definition of wisdom in human development, a leading theorist in the field conceptualizes it as involving “some balance of intelligence and creativity” (Sternberg & Lubart, 2001, p. 515).

Philosophical approaches

Values the history of wisdom discourse in philosophy.

Implicit-theoretical approaches

Approach to the study of wisdom that investigates people's common understanding of wisdom

Explicit-theoretical approaches

Seek to empirically study wisdom in an objective and scientific way.

There are three broad categories for approaches to studying and understanding wisdom in human development: **philosophical approaches**, implicit-theoretical approaches, and explicit-theoretical approaches (Sternberg & Lubart, 2001). The philosophical approaches value the history of wisdom discourse in philosophy. They look to the ancient philosophers and analyze their conceptualizations of wisdom.

Implicit-theoretical approaches “search for an understanding of people’s folk conceptions of what wisdom is” (Sternberg & Lubart, 2001, p. 501). Here, the goal is to develop a concept of wisdom that is seen as true by the average person, as opposed to some objective, quantifiable construct.

The **explicit-theoretical approaches** largely seek to empirically study wisdom in an objective and scientific way (Sternberg & Lubart, 2001). However, the individual perspectives within this broad category vary in their methodology and conceptualizations of wisdom.

Overall, wisdom is viewed as an important asset in constructing integrity in late adulthood. Wisdom is the perspective the elderly need to understand their own reality and make sense of their lives. It is the product of introspection, and goes far beyond what people learn through education and reading.



Pause and Process:

1. How does motivation differ between younger and older adults?
2. What is wisdom?

INFORMATION-PROCESSING IN LATE ADULTHOOD

In middle adulthood we saw that many aspects of information-processing begin to decline. This trend continues in late adulthood. Declines in the speed of cognitive processing are similar to the slowdown in physical development in late adulthood (Birren, Woods & Williams, 1980). These declines parallel the changes taking place in the brain and central nervous system at this time of life. Speed in the ability to process information and in reaction time gradually declines, for example, because of less efficient functioning of the neurological and sensory bases of cognition as well as the desire of elderly people to be accurate (Madden, 2001; Salthouse, 1985).

Attention

Speed of processing and the ability to control what one pays attention to are vital for daily functioning (Rogers & Fisk, 2001; Tun & Lachman, 2008). We already know that processing speed declines as the brain ages, but what about attention? When attention is assessed globally, attention for complex tasks appears to decline over time. However, college-educated adults perform complex attention tasks at levels for individuals who are ten years younger than them, but uneducated. Let us restate this. Have you ever seen the TLC show *How to Look Ten Years Younger*? In this show, people who look rather tired and worn for their age are given

a complete makeover. By the end of the show, they look ten years younger. Back to attention, the people who went to college have the attention ability of people ten years younger. Pretty cool, huh? This college-effect persists up to the age of seventy-five (Tun & Lackman, 2008). However, this was a study focusing on complex attention measured in a global fashion. Is there a way to tease apart aspects of attention, much like there are different aspects of memory? If so, would these different aspects show the same effects with aging, or differ?

There is evidence to suggest that there are at least two systems devoted to attention in the brain: the **posterior attention system** and the **anterior attention system** (Posner & Peterson, 1990). The posterior attention system includes brain areas such as the posterior parietal cortex and the thalamus (Posner, 1995). This attention system appears to be important for being able to pay attention to visual information, particularly visual space. The anterior attention system includes brain areas such as the prefrontal cortex. This attention system appears to be important for being able to direct and choose what a person wants to pay attention to among a multitude of stimuli. Research using both cognitive tasks and electroencephalogram (EEG) recordings seems to indicate that the aging process affects the anterior attention system more than the posterior attention system (West & Bell, 1997). This would mean that older adults maintain their ability to pay attention to and cognitively process visual information, whereas the ability to focus attention on one particular aspect of a task would show decline.

Not all news is bad news, however, when discussing attention in old age. **Parallel processing** refers to the ability to cognitively process and complete two or more tasks at a time. One study found that older adults outperform young adults in parallel processing when at least one task is automatic (Lien et al., 2006). For example, word recognition is automatic in elderly adults—who have been reading for decades. Older adults are able to complete a word recognition task and another visual or auditory task better than young adults. However, it must be kept in mind that this superior parallel processing in older adults is “restricted to processes for which older adults have greater cumulative experience” (Lien et al., 2006, p. 443). In other words, for older adults to excel in parallel processing, they must be completing tasks that they have been doing for years.

Memory

Among the most striking mental changes are those that affect memory (Poon, 1985). Undoubtedly, these changes are frustrating for both older people and those with whom they interact. A slowing, shrinking brain plays a large role in memory decline.

As individuals progress through late adulthood, they have a harder time recalling more recent events in memory, although maintaining the ability to recall information in the distant past. As they advance in age, elderly people may find that they can describe in intricate detail a high school prom attended sixty years ago, but have difficulty remembering what they had for breakfast that morning.

There may be increasing difficulties with the steps required for processing memory. Usually, three steps are involved in this process: (1) encoding information; (2) storing the

Posterior attention system

Includes the brain areas such as the posterior parietal cortex and the thalamus.

Anterior attention system

Includes the brain areas such as the prefrontal cortex.

Parallel processing

Refers to the ability to cognitively process and complete two or more tasks at a time.

Episodic memory

Specific life event memories.

Working memory

The workbench where simultaneous cognitive processes can be attended to and handled.

Source memory

The ability to remember where you heard, saw, or learned something.

Explicit memory

The information that you purposely try to recall, such as when you tell a friend about a movie you just watched.

Semantic memory

General knowledge.

Procedural memory

Knowledge about how to perform certain tasks, like riding a bike or driving a car, or even walking.

Implicit memory

Unconscious memory that guides your behavior, thoughts, and feelings.

Primary short-term memory

The conscious process of keeping information in short-term memory.

information into long-term memory; and (3) retrieving the information for use at a later time. Older people appear to be less efficient in the first step. Encoding is organizing information so that it can be stored in a particular way in the brain (e.g., associating a person's name with an object). Elderly people are also much slower than younger people at retrieving information. Their memory searches take up longer periods of time as they generate and think about alternatives and options. This slowdown is influenced by a person's level of mental activity (Craik, Byrd & Swanson, 1987), for those who remain intellectually stimulated seem to have fewer problems with retrieving information. Hence, if you want to slow down your own memory decline in old age, stay mentally active (e.g., read, do puzzles, write, etc.). The contributions of an enriched lifestyle to maintaining the neurological aspects of mental functioning cannot be overestimated (Hopson, 1984).

Beyond decline in the process of memory, the picture is complex for what specific aspects of memory decline during adulthood. **Episodic memory**, working memory, source memory, and explicit memory all show decline in late adulthood (Backman, Small & Wahlin, 2001). Episodic memory is memory of specific life events. **Working memory** is the workbench where simultaneous cognitive processes can be attended to and handled (Baddeley, 1986, 1996; Kemper & Mitzner, 2001). **Source memory** is the ability to remember where you heard, saw, or learned something. **Explicit memory** is the information that you purposely try to recall, such as when you tell a friend about a movie you just watched.

Semantic memory, or your general knowledge, appears to remain intact. However, it appears that it becomes more difficult to retrieve semantic knowledge in late adulthood (Backman, Small & Wahlin, 2001). **Procedural memory** is knowledge about how to perform certain tasks, like riding a bike, driving a car, or even walking. This type of memory remains largely unchanged with aging (Backman, Small & Wahlin, 2001). **Implicit memory**, or unconscious memory that guides your behavior, thoughts, and feelings, also appears to remain intact. **Primary short-term memory** is the conscious process of keeping information in short-term memory. This aspect of short-term memory appears to remain stable in late adulthood (Backman, Small & Wahlin, 2001).

Intelligence

The aged person is often pictured as forgetful, intellectually slow, and indecisive. IQ scores among people of very advanced age (older than eighty) do show a constant decrease closely associated with the aging process. Scores on the portions of tests that measure problem-solving and speed of performance show a greater decline than scores on the parts that measure verbal skills (Salthouse, 1985). Other information suggests that the lower level of functioning in late adulthood is due more to encountering problems that are new and unfamiliar than to a general diminishment in problem-solving abilities (Labouvie-Vief & Schell, 1982).

A dual-process model of intellectual changes has been proposed to explain what happens to mental functioning in late adulthood (Dixon & Baltes, 1986). This model describes two aspects of intelligence: (1) the mechanics dimension, which resembles fluid intelligence; and (2) the pragmatics dimension, which relates to practical thinking,

applying knowledge and skills gained from experience, and wisdom in solving problems of everyday life.

According to this model, elderly people decline in the mechanics dimension because the information that fuels this aspect of intelligence was gained in childhood and has limited usefulness in old age. Pragmatic intelligence, however, is extremely useful at this time of the life span. It can be likened to the wisdom gained from experience. This dimension is much broader in scope than crystallized intelligence. In late adulthood, it enhances the quality of life and may well play an important part in helping elderly individuals achieve the sense of integrity discussed by Erikson.

What about crystallized and fluid intelligence in old age? The trends in cognition that began in middle adulthood continue through the years of late adulthood. Crystallized intelligence skills remain stable or even increase during this stage. As you will recall, these are skills acquired through education, such as verbal comprehension. However, fluid intelligence (involved in processing information) declines during this stage.



Pause and Process:

1. How does attention change in late adulthood?
2. Describe intelligence and the aging process.

LANGUAGE

Changes in Language Skills

One aspect of our language ability is reading. In fact, reading can be quite demanding on our information-processing skills, for we must visually make sense of the written symbols we are seeing, comprehend the words that these symbols make up, assess the syntax and semantics of the sentence, integrate the sentences into a cohesive whole, and consider the context and pragmatics of what has been read (Kemper & Mitzner, 2001). Does aging impact our ability to read? If yes, how and why does aging impact our reading skills?

Working memory, processing speed, and inhibition are three areas that decline in older adulthood. It has been widely researched what role these three areas play in contributing to declines in language-processing tasks such as reading (Kemper & Mitzner, 2001). Working memory can be conceptualized as “where active thinking occurs ... Its operation involves combining information coming into sensory memory with information stored in long-term memory and transforming that information into new forms” (Siegler, 1998, p.67). Working memory is thought to have limited capacity and consists of different components for different types of information and processing (Kemper & Mitzner, 2001; Siegler, 1998). Declines in working memory are correlated with declines in reading (Kemper & Mitzner, 2001). Specifically, declines in working memory appear to impede older adults’ ability to keep information in memory for future recall or application.

Inhibitory deficit theory

A theory that examines what aspects of cognitive processing declines with age, and what aspects of cognitive processing remain stable.

Off-target verbosity

The tendency for some older adults to drift to irrelevant topics during conversation.



20. What is the communicative predicament of aging?

Elderspeak

A style of speech used when speaking with older adults. It is similar to infant-directed speech in which speech is simplified, spoken slowly, and higher in pitch and intonation.

Beyond declines in working memory, older and younger adults differ in their strategies when reading for comprehension (Kemper & Mitzner, 2001). Although younger and older adults are more similar than different in how they allocate their time when reading a passage, older adults spend less time pausing at sentence boundaries than younger adults. Further, younger adults focus more on new vocabulary words and concepts, whereas older adults rely on the context and connecting new information with old information.

Inhibitory deficit theory suggests that a decline in inhibition plays a primary role in reading decline (Kemper & Mitzner, 2001). Inhibition cognitive processes allow a person to focus on relevant information and ignore irrelevant information. Some research supports this idea showing that older adults get distracted by irrelevant information when reading passages of text. However, other research has failed to support this theory. More research is needed to clarify the role of inhibitory processes in reading.

One interesting, yet controversial, area of research focuses on off-target verbosity. **Off-target verbosity** is the tendency for some older adults to drift to irrelevant topics during conversation (Kemper & Mitzner, 2001). Several areas have been found to be correlated with off-target verbosity, including:

- Lower frontal lobe functioning in the brain
- Psychosocial stress
- Extroverted personality
- Smaller social networks
- Lower social support

Although some research supports the above correlations, other research has not found such results (Kemper & Mitzner, 2001). Similarly, inhibitory deficit theory has been offered as one explanation for off-target verbosity; however it is not the only explanation out there. Alternative theories suggest that perhaps older adults misread cues during conversation or speaking tasks, causing them to engage in more off-target verbosity and monologues about their rich and diverse past.

Elderly-directed Speech

Elderspeak refers to a style of speech used when speaking with older adults. It is similar to infant-directed speech in which speech is simplified, spoken slowly, and higher in pitch and intonation (Kemper & Mitzner, 2001). Elderspeak is tied to negative stereotypes of the elderly, as well as real communication needs (such as reduced hearing ability).

Elderspeak can lead older adults to develop an “old” identity (Kemper & Mitzner, 2001). This has been correlated with lower levels of self-esteem, cognitive decline, and social isolation. These outcomes further increase the use of elderspeak by those around the older person. This nasty **downward spiral of communication is referred to as communicative predicament of aging**, a term coined by Ryan and colleagues in 1986. Elderspeak is especially noticeable in convalescent homes, where the environment is typically accepting of such speech.

*Pause and Process:*

1. How is memory related to reading?
2. Explain what off-target verbosity is.

❧ SOCIAL AND EMOTIONAL DEVELOPMENT DURING LATE ADULTHOOD ❧

LEARNING OBJECTIVES:

1. Characterize emotional development and adjustment during late adulthood
2. Describe understanding of self with others during late adulthood
3. Explain psychosocial development during late adulthood

Late adulthood can take up a considerable portion of the individual's life span. One does not immediately become elderly upon reaching sixty-five. Aging is a gradual process and the changes come slowly. Nonetheless, late adulthood is a time of continued decline. This general trend is most noticeable in the physical changes that occur with increasing regularity. The role changes that accompany old age are also very noticeable. These are primarily in work and family roles. Although people are often able to compensate for these declines, adjustments are made more slowly and less frequently as aging advances.

The developmental tasks of late adulthood differ from those of earlier stages of the life span in two fundamental ways. First, there is a focus on the maintenance of one's life and quality of lifestyle rather than on discovery and creativity (Havighurst, 1972). Second, the tasks center on happenings in the person's own life rather than on what is occurring in the lives of others (Hurlock, 1980).

The developmental tasks of late adulthood are vast and varied. People at this stage are challenged to adjust to their increasing dependency upon others, shrinking financial resources that lead to changes in lifestyle and living conditions, and the need to develop new interests (Havighurst, 1972). **Furthermore, they may need to cope with the death of a spouse and continue to meet social and civic obligations.**



Coping with the death of a spouse and shrinking financial resources is a challenge for some.

Many people find old age a time of contradictions. On the one hand, they experience deterioration in physical skills and functioning. On the other hand, personal and social growth continues through the years of late adulthood. Thus continuity and change rule even in late adulthood.

Adjusting to changes is a central challenge of social development at this time of life. Most people know that limitations can impede development during their lifetime. Some limitations originate from within, others from the environment. In late adulthood, people become aware of more limitations, but as in all other stages of life, successful adjustment and adaptation can lead to healthy development in late adulthood.

EMOTIONAL DEVELOPMENT

Emotional Adjustment to Aging

Affect intensity

One's intensity of emotion.

Affect intensity, or one's intensity of emotion, is one area of emotional development studied in respect to adulthood and aging (Magai, 2001). Although studies have differed in their results, one rather consistent finding is that older adults report experiencing less intense negative emotions than younger adults. Other studies have found that older adults report lower levels of intensity for both negative and positive emotions. This means that older adults still experience negative and positive emotions, but less intensely.

Beyond intensity, what about frequency of emotions in adulthood? Studies have found that the experience of positive emotions either remain stable or increase across the adult years and remain so until very late adulthood (Magai, 2001). Other studies have found that the experience of negative emotions is highest for younger adults or no difference across adulthood. In summary, older adults are similar to younger adults in their emotional experiences, or experience slightly more positive emotions and less negative emotions.

In comparison with younger adults, older adults appear to be more complex in their emotional experiences (Carstensen et al., 2000; Magai, 2001). This is referred to as **affective complexity**. However, other research indicates that there is an increase in affective complexity between early adulthood and middle adulthood, and then a decline in late adulthood. Affective complexity and emotion regulation has been correlated with healthy coping in adulthood.

Affective complexity

The appearance of older adults having more complex emotional experiences compared with younger adults.

PERSONALITY Personality can be defined as “individual differences in diverse human characteristics, such as traits, goals and motives, emotion and moods, self-evaluative processes, coping strategies, and well-being” (Ryff, Kwan & Singer, 2001, p. 477). There are many theories of personality. In previous adulthood **chapters**, we focused on the big five traits theory of personality. In this **chapter**, we are going to learn about some classical theories of personality that focus on older adults.

Peck's Views of Personality Adjustments Psychologist Robert Peck (1968) extends Erikson's views about psychosocial adjustments in late adulthood (which we will discuss at

Ego differentiation versus work-role preoccupation

The adjustments that must be made to retirement from work roles.

Body transcendence versus body preoccupation

The necessity of finding happiness and satisfaction in relating to others and in creative or mental endeavors for healthy development to occur.

Ego transcendence versus ego preoccupation

Recognizing and accepting one's impending death by living life as fully as possible and attempting to make life more secure, more satisfying, and more meaningful for those who will survive after one's death.

Integrated

A personality type in late adulthood that may be thought to resemble the sense of integrity described by Erikson.

Armored-defended

A personality type where the individual strives to maintain control over their lives.

the end of the [chapter](#)). Peck believes that three main adjustments occur in the personality development of elderly people. First, **ego differentiation versus work-role preoccupation** refers to the adjustments that must be made to retirement from work roles. The person must adapt to shifting the primary personal identity away from a work role to other means of self-identity in other roles.

Second, **body transcendence versus body preoccupation** refers to the necessity of finding happiness and satisfaction in relating to others and in creative or mental endeavors for healthy development to occur. Unhealthy development takes place when a person focuses on their bodily concerns and experiences distress due to the increasing decline in physical functioning.

Third, elderly individuals are challenged to master **ego transcendence versus ego preoccupation**. This involves recognizing and accepting one's impending death by living life as fully as possible and attempting to make life more secure, more satisfying, and more meaningful for those who will survive after one's death. The psychosocial tug at this time in life is to be intensely introspective. Although this is important, it cannot become the consuming interest and focus of one's psychological attention at the expense of others who are important in one's life.

Personality types among the elderly Several researchers propose that successful adjustment in late adulthood relates to an individual's personality type (Neugarten, Havighurst & Tobin, 1968; Reichard, Livson & Peterson, 1962). Four basic types are identified in addition to role activities that describe these.

An **integrated** personality type in late adulthood may be thought to resemble the sense of integrity described by Erikson. These individuals are well-adjusted and flexible in their approach to life. Three basic variations can be observed in this pattern: (1) reorganizers are involved in a wide range of activities and rearrange their lives by substituting new roles for those that are terminated; (2) the focused participate in moderate levels of activity and reserve their attention and energies for only a few roles; and (3) the disengaged maintain low levels of activity but attain a high degree of personal satisfaction.

Others have an **armored-defended** personality type. These individuals strive to maintain control of their lives. This is accomplished by implementing various means to defend against anxiety and other threats to one's well-being. Two variations may be observed among such individuals: (1) those who hold-on cling as long as possible to activities typical of middle-aged people such as continuing employment past the time when many others have retired; and (2) those who are constricted or who become withdrawn from activities and people as a defense against the ravages of advanced age.

Others are seen as **passive-dependent** personality types. Two basic variations may be observed: (1) those that are succorance-seeking, or having strong dependency needs on others; and (2) those who are apathetic or having little or no interest in others or in their surroundings. Others are seen as **unintegrated** in personality. These individuals may be described as experiencing dementia. They have poor control of emotional expression and disorganized thought processes.

Passive-dependent

A personality type with two basic variations that may be observed: (a) those whom are succorance-seeking in having strong dependency needs on others; and (b) those who are apathetic or having little or no interest in others or in their surroundings.

Unintegrated

A personality type where individuals may be described as experiencing dementia.

ATTACHMENT Compared with other stages of the life span, relatively little research has focused on late adulthood and attachment. What little research is out there seems to indicate that there is a shift in attachment style profiles during late adulthood (Magai, 2001). Although the majority of young adults are secure in their attachment style, there is an increase in the avoidant (a.k.a., dismissive) attachment style with age. **The rise in avoidant attachment styles in old age may have something to do with an increase in the number of losses during this period.** Many elderly individuals have had to cope with the loss of family and friends; a dismissive attachment style may be an adaptation that attempts to help them prepare for future losses.



A shift to avoidant attachment is seen at this stage.

*Pause and Process:*

1. Explain how emotions change in late adulthood.
2. Why may attachment change in the elderly?

SELF WITH OTHERS

Leisure Time

Whereas leisure time is constricted in middle adulthood due to family and work obligations, leisure time increases in late adulthood. Retirees are able to appreciate a party for the pure social aspect of it (Hansen, Dik & Zhou, 2008). Like younger adults, older adults enjoy leisure activities such as entertainment, shopping, and gardening. Older adults do differ in terms of leisure interests for more active forms of leisure. Whereas younger and middle age adults see physical, competitive, and outdoor activities as separate interests, older adults do not make such a distinction. It appears that these types of activities converge into one general category for elderly adults.

Moral Development

Values, spirituality, and religiosity are three terms that typically fall into the category of moral development. Earlier in this textbook, we discussed the stages of moral development proposed by Kohlberg, in this [section](#) we will discuss what is known about religiosity across the life span.

Values

A person's belief about what is right and what is wrong.

Values can be defined as a person's belief about what is right and what is wrong. Some values are secularly-based, whereas others are derived from one's religion. For example, Hitler had the secularly-based value that a Jew's life was worth little and should be eliminated and that life should be valued only in specific types of people. In contrast, the Judeo-Christian value in the sanctity of all human life is based on their religion. Hence, values can be vastly different dependent upon what they are based.

Spirituality

A sense of connectedness with God (or some other higher spiritual being).

Spirituality can be conceptualized as a sense of connectedness with God (or some other higher spiritual being). **Religiosity** incorporates this spirituality, but includes the additional dimension of living the faith. Said another way, a spiritual person may feel that they have a close relationship with God, but never go to church. A person high in religiosity, however, both has this close relationship with God and acts on this belief by going to church and engaging in other sorts of religious activities. Gallup polls consistently find that most Americans consider religion an important part of their lives.

Religiosity

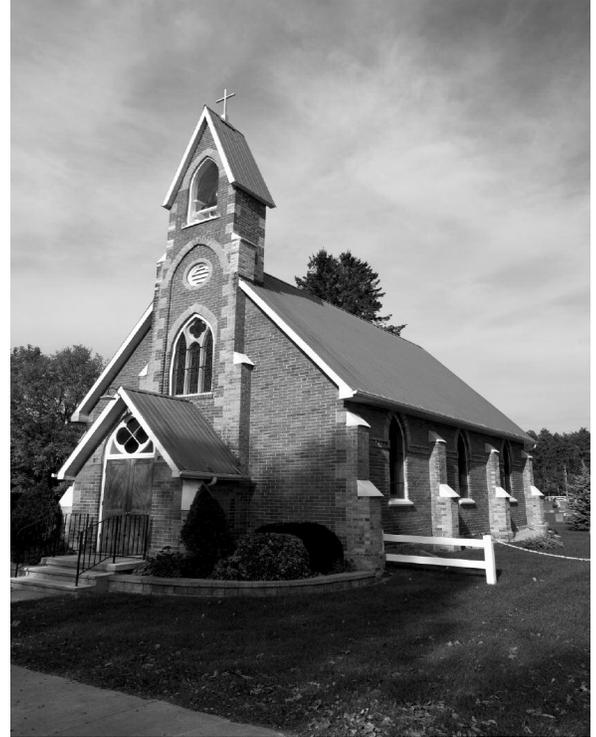
Incorporates spirituality, but includes the additional dimension of living the faith.

In general, children and adolescents that are raised in families that value social responsibility and compassion internalize these values. These children and adolescents engage in higher levels of volunteerism and show greater compassion for those in need than children not raised in such homes (Flanagan, 2004). Children and adolescents raised by religious parents tend to internalize this belief system (Paloutzian & Park, 2005), especially if the parent-child relationship is good (Dudley, 1999; Ream & Savin-Williams, 2003; Streib, 1999). Numerous research studies (for example, see Cotton et al., 2006; Fehring et al., 1998; King & Benson, 2005; Oser, Scarlett & Butcher, 2006; Ream & Savin, Williams, 2003; Sinha, Cnaan & Gelles, 2007; Youniss, McLellan & Yates, 1999) have examined the impact of religiosity on youth development. Religiosity in adolescence is associated with many positive outcomes, including:

- Meaning and direction in life
- Healthy coping skills
- Higher levels of community service/volunteer work
- Lower drug use, alcohol use, and smoking rates
- Lower delinquency rates
- Lower risk-taking behavior
- Lower rates of premarital sex
- Less depression
- Better grades and less truancy
- Healthier role models
- Greater empathy for those in need

[Religion continues to be important and associated with positive outcomes in adulthood.](#) Although it is important to keep in mind that not all Americans consider religion important

in their lives, for more than 70% of adults it is an important part of their identity and daily living (Brim, 1999). Religiosity typically increases with aging (Wink & Dillon, 2002). Women usually report higher levels of religiosity than men, and African Americans and Latinos report higher levels than European Americans (Idler, 2006; Taylor, Chatters & Levin, 2004). Religiosity is associated with better physical health, mental health, longevity, and coping skills (for example, see Gillum & Ingram, 2007; Hummer et al., 2004; Krause, 2006; McCullough & Laurenceau, 2005; Yoon & Lee, 2007). Some research indicates that by increasing meaning in life, religiosity results in a greater sense of well-being (Steger & Frazier, 2005).



Religion plays an important role for moral development.

Family Influences

Just as adult children must adjust to the death of a parent, many individuals must adjust to the death of a spouse in middle or late adulthood. **Widowhood** is the label applied to both men and women who survive the death of a spouse. Due to differences in life expectancy and death rates, more women become widows than men. Becoming a widow can change a woman's identity, especially if her role as a wife has been a central aspect of her family role. This usually does not hinder a woman's personal development, however. In our culture, there are many alternatives available to women on becoming widows (Anderson, 1984; Houser & Berkman, 1984; Lopata, 1973). Options include remarriage, retraining or education for jobs, reentry into the work force, participating in voluntary organizations and activities, devoting additional time and effort to parenting and grandparenting roles, and so on.

Some of the more pressing needs of women who become widows include (1) expressing grief and experiencing the bereavement process with family and friends; (2) meeting companionship needs, especially if being alone is occurring for the first time in adulthood; (3) being protected from the "good" intentions of people wanting to give advice that is often contradictory in nature; (4) gaining experiences that build self-confidence, personal skills, and competencies; and (5) gaining assistance in reengaging socially with others (Lopata, 1973).

Men who are widowed appear to have different reactions and adjustment issues (Robinson & Barret, 1986; Marshall, 1986). Loneliness and depression may be central problems for middle-aged men because they are less likely than women to have a close, intimate, confidante

Widowhood

A label applied to both men and women who survive the death of a spouse.

relationship with someone other than their spouse. These men may experience other difficulties on becoming single at mid or late life. This suggests that these men are poorly prepared to care for themselves (performing household tasks, for example). When widowhood coincides closely with retirement at the end of middle adulthood, losing a spouse tends to destroy plans that have been made for late adulthood involving a couple rather than a single individual. This devastating change in status and situation can be manifested in the high likelihood of suicide observed among men who are widowed (U. S. Bureau of the Census, 1990). Not all men who are widowed react in this manner, however. Healthy ways of adjustment can occur when men become more invested in their grandparenting role or use the experience as a means for initiating personal growth opportunities.

Friendship and Social Support

Friendship and social support continues to be important in late adulthood (for example, see Antonucci, 2001; Carstensen, 1991, 1998, 2006). Friendship provides psychological intimacy and camaraderie. Social support can be emotional in nature (such as holding a person's hand while undergoing kidney dialysis), or instrumental in nature (such as driving a person to doctor appointments). However, the structure of social support networks tends to change in late adulthood.

Socioemotional selectivity theory is a theory that has been developed by Laura Carstensen (e.g., 1991, 1998, 2006) during the past couple of decades. This theory emphasizes that older adults optimize their social networks. They allow peripheral relationships to end, actively end negative relationships, and focus attention and energy on happy, fulfilling relationships. So although older adults may have smaller social networks, they are often filled with rewarding relationships that will stand the test of time.

Adjusting to Retirement

The average person will spend 10–15% of their life in retirement. This developmental event that typically occurs in late adulthood is both a process and a significant change in social status (Atchley, 1971, 1976; Dudley, 1991).

Cox and colleagues (2001) recently identified six lifestyle patterns in older adults:

- Older adults who continue to work full-time
- Older adults that continue to work part-time
- Older adults that retire and become active in volunteer work
- Older adults that retire and become active in recreational/leisure activities
- Older adults that retire and later return to work full-time

Several factors influence when someone will retire (Kovar & LaCroix, 1987). First, the age at which a person is eligible for receiving social security influences when many people are able to retire. This age is slowly being increased to sixty-four for early retirement and sixty-seven to receive full social security benefits. Second, economic and social conditions influence the decision to continue working or to retire in late adulthood. Third, the ability



29. What six lifestyle patterns did Cox and colleagues find for older adults?

to do work-related activities is an important determinant of when people retire. Inability to perform certain physical acts required in some jobs—stooping, kneeling, crouching, lifting, carrying, walking, climbing stairs, standing on the feet for extended periods of time—often hastens the decision to retire.

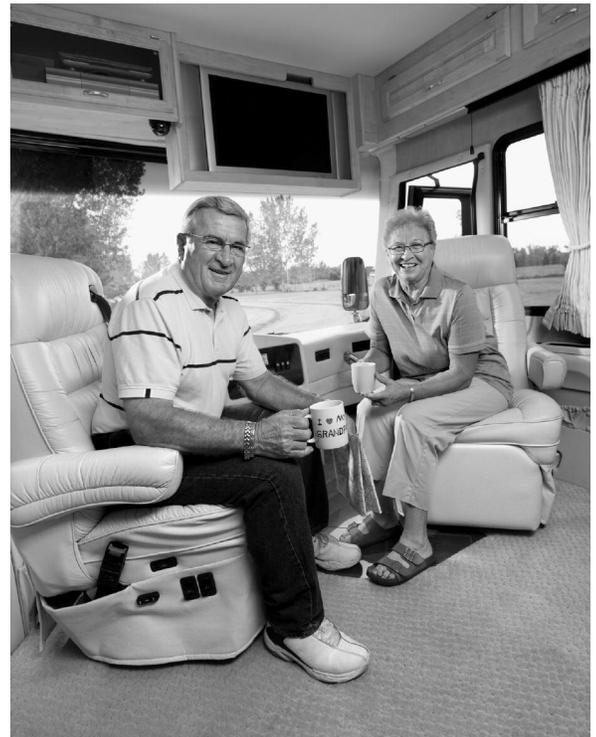
Traditionally, retirement has been viewed as a debilitating experience that people dread. In this view, the work ethic is strongly ingrained in our culture as the primary means for achieving and maintaining identity in adulthood, that retirement becomes equal to social suicide (Beck, 1982; Brubaker, 1990). It is becoming apparent, however, that what people miss when they retire is the income from work rather than the social status and interaction with others (Anrig, 1988; Kirkpatrick, 1989). When people know they will be financially secure during retirement, they frequently are more willing to leave the work force and to do so at earlier ages (Crone, 1990; Flatermayer, 1991).

Many actually look forward to retirement as a time of renewal and personal growth (Palmore & Maeda, 1985). Individuals that retire of their own free will are happier with the transition than individuals that are forced to retire due to health or occupational age limits (Cox et al., 2001). Additionally, individuals that are healthy, well-educated, married, and with a good social support system typically adjust best to retirement (Elovainio et al., 2001; Price & Joo, 2005). **Further, individuals who are flexible and develop hobbies, interests, and friendships that are not work related typically adjust best to retirement** (Atchley, 2007; Baehr & Bennett, 2007; Cox et al., 2001; Eisdorfer, 1996; Zarit & Knight, 1996). Volunteer work is also related to greater happiness after retirement (Cox et al., 2001).

It is important to make adequate preparations to ensure a sufficient financial base for retirement. Many people start making plans during the latter part of early adulthood or during early middle age for this life change (Bergstrom, 1990; Kirkpatrick, 1989; Weistein, 1991). In general, men spend more time planning for retirement than women (Jacobs-Lawson, Hershey & Neukam, 2005). One important consideration is whether certain employment benefits such as medical and death insurance, disability coverage, annuities, and investments will continue after retirement.

RETIREMENT AS A PROCESS

Although many conceive of retirement as an event (like a birthday party), it is actually a process (Atchley, 1976; Kim



Those that develop hobbies and friendships adjust best to retirement.

& Moen, 2002). According to Atchley (1976), retirement is a process that progresses in stages. Adapting successfully to this significant life event depends on a variety of factors, such as loss of finances, loss of self-esteem, loss of work-related social contacts, loss of meaningful tasks, and loss of a reference group. The stages Atchley describes relate to changes in the retired person's adult social role. The length of time each stage takes and the tasks that need to be accomplished during it differ from person to person. Moreover, not everyone goes through all these stages.

Pre-retirement

The period preceding retirement during which a person may make plans and arrangements for his or her retirement.

Honeymoon phase

Immediately following the formal event of retirement, most people feel happy and peaceful initially as they experience the independence of retirement.

Disenchantment stage

In the aftermath of the honeymoon phase, emotional depression settles in as people come to realize that they have actually fully withdrawn from a constant and fulfilling social role in their lives.

Reorientation stage

People attempt a more realistic appraisal of their options for the future.

Stability stage

The routine of establish behaviors.

Termination

The last stage which is marked by a role shift from retiree either to being employed again or to being disabled in advanced age.

- **Pre-retirement** is composed of two substages. In the first, people have negative attitudes about retirement and see it as an event far into the future. In the second, people realize that retirement is fast approaching and that they must finalize their plans for it if they are to adjust successfully. People may now participate in pre-retirement programs and seminars and seek out others who have already retired for information.
- The **honeymoon phase** immediately follows the formal event marking retirement. Most people feel happy and peaceful initially as they experience the independence of retirement. This is characteristically an active and busy period in which people participate in projects and tasks they have delayed for lack of time.
- The **disenchantment stage** is the aftermath of the honeymoon period. It is a time of emotional depression as people come to realize that they have actually fully withdrawn from a constant and fulfilling social role in their lives. They often feel “at loose ends” with little direction in their lives. They have plumbed the depths of “free time” and are now ready to explore more useful and resourceful ways to spend their days. Many people take up volunteer work, travel, or hobbies as meaningful and enjoyable ways to use their time.
- In the **reorientation stage**, people attempt a more realistic appraisal of their options for the future. Some discover that volunteer activity is too much like actual work, is without meaningful reward, and withdraw from it. Others find that hobbies are boring but find volunteer activity highly rewarding. Finding one's niche and developing routines helps at this time.
- In the **stability stage**, people have a routine of established behaviors. These assist them to cope with other changes taking place in their lives. At this stage of retirement, people have come to accept the new role and personal identity of retiree. In doing so, they acquire a new set of behavioral standards, social norms, and expectations.
- The last stage, **termination**, is marked by a role shift from retiree either to being employed again or to being disabled in advanced age. In the latter instance, people can no longer function independently. However, nearly seven million adults return to work after retirement, with about one-third doing so for financial reasons. This means that two-thirds return to work for reasons that are not financial and they report general happiness about this decision (Putnam Investments, 2006).



Pause and Process:

1. What are some adjustments that need to be made when widowed?
2. What are the stages in the retirement process?

PSYCHOSOCIAL DEVELOPMENT

Sense of integrity versus a sense of despair

The final psychosocial attitude proposed by Erikson; it is developed in late adulthood. *Integrity* is characterized by completion of the task of integrating the various aspects of the self-concept and identity and evaluation of one's life as having been a meaningful and fulfilling experience. *Despair* is characterized by a feeling of loss, disappointment, and deep dissatisfaction with the way one's life was lived.

Integrity Versus Despair

The final stage of psychosocial development during the life span described by Erikson (1950, 1964) is the fulfillment, result, and culmination of all preceding stages. Acquiring a **sense of integrity versus a sense of despair** is the challenge of late adulthood.

One achieves a sense of integrity by identifying with all humanity. An individual who acquires the attitude of integrity has come to understand and accept the meaning of life. This person recognizes and values the uniqueness of his or her existence during a particular historical time in a particular culture. Included in this understanding is an acceptance of the temporal limits of life. This acceptance produces serenity at the end of life.

Healthy psychosocial change in old age allows one to complete the integration of the various aspects of the self that has occupied so much developmental attention during the life span. There is wholeness to the self, characterized by acceptance of who one is, how one's life has been lived, the decisions one has made in guiding and directing life changes, and the consequences of these decisions.

Psychosocial development in late adulthood challenges people to reconcile the realities of life with what they had hoped for, dreamed about, or desired. Elderly people spend time reflecting upon and evaluating the course of their lives. They examine the essentials of the self or personality, no longer preoccupied with how they should act and no longer holding false beliefs about what is right or appropriate behavior.

Those who achieve the attitude of integrity attain a stronger sense of satisfaction than they experienced earlier in their life. They see the future as less urgent and everyday temporal existence as more important. For many people at this stage, life is lived for the self rather than for others, as it was in the past.

This period of life is one of renewal. Individuals continue to grow until they die. This new growth is motivated by the courage to face virtues, strengths, weaknesses, and shortcomings.

The attempt to integrate the self at this time of life can also lead to a sense of despair derived from a feeling of loss, disappointment, and deep dissatisfaction with the way one has lived one's life. Elderly people with this attitude feel regret and apology. They fear and dread death. Disgruntlement marks their psychosocial demeanor rather than serenity. They may have a pervasive sense of "If only—" related to intense feelings of remorse about decisions and choices made at crucial points in their life span: "If only I had gone to college, I might have had a better job and been happier in my life," for

example, or “If only I hadn’t had an abortion, I would have had a child to love and someone to love me right now.”

It is a terrible thing to gain such insights about one’s life when there is very little time left to make changes that might lead to personal happiness. Despair is psychologically crippling, producing hopelessness, depression, and even desperation.

Most people apparently establish a sense of integrity rather than a sense of despair at this time in life (Neugarten & Neugarten, 1987). This attitude is derived from a sense of satisfaction, apparently not only with decisions made earlier in life, but also with present circumstances. These can include having a sound enough financial base to live decently following retirement and having reasonably good health (Brubaker, 1990). Satisfaction with life in the present also depends on the measure of control an elderly person has of their daily affairs. This is why those who reside in nursing homes often have less positive self-concepts and feel less satisfaction with their lives than elderly people living in their own homes (Kovar, 1988).



Pause and Process:

1. How does a person obtain a sense of integrity?
2. Why might someone obtain a sense of despair?

SUMMARY

1. Late adulthood is the final stage of life span development. It begins at age sixty-five or at retirement and continues until death. Five subcategories of late adulthood are recognized: the young-old (sixty to sixty-nine years), the middle-aged old (seventy to seventy-nine years), the old-old (eighty to eighty-nine years), the very old-old (ninety to ninety-nine years), and the centenarians (one hundred or more years). The developmental tasks of late adulthood focus on adjusting to the aging process and to role changes occurring at this stage of life.
2. Major physical changes in late adulthood are continued reductions in height and weight, dramatic changes in sensory functioning, restricted movement owing to changes in muscle and bone func-

tioning, decreased heart output and rising rates of cardiovascular disease and stroke, decreased elasticity of the lungs, a variety of digestive disorders, increased genitourinary disorders, and less efficient functioning of the brain and central nervous system. Quality of life in late adulthood can be affected positively or adversely by diet, health, and exercise.

3. Two major disorders that can develop during late adulthood are Alzheimer’s disease and Parkinson’s disease. Both diseases are progressive and involve brain cell impairment and death. Currently, there is no cure for these diseases; however, stem cell research is seen as a hopeful field for the eventual development of a cure. There are two main branches of stem cell

- research: embryonic stem cells and somatic stem cells. As of the writing of this textbook, embryonic stem cell research has produced no treatments or cures, and is prone to tissue rejection and tumor growth. Conversely, somatic stem cell research has developed dozens of treatments and cures without the controversy surrounding embryonic stem cell research. There is great promise in somatic stem cell research in the future development of treatments and cures for late adulthood diseases and disorders.
4. Research within the framework of selection, optimization, and compensation theory has found that goals and motivations shift across adulthood. Older adults show greater persistence on compensation tasks than younger adults.
 5. Wisdom is an area that is gaining attention in human development research. Three broad categories of approaches to wisdom are the philosophical approaches, the implicit-theoretical approaches, and the explicit-theoretical approaches.
 6. Two principle cognitive changes occur in late adulthood: a decline in general processing speed and significant decline in some areas of memory. Attention shows decline in some areas. Crystallized intelligence continues to increase or remain stable, whereas fluid intelligence continues to decline during this stage.
 7. Language skills are dependent upon the brain, processing speed, memory, and other cognitive processes. We see decline in language abilities as other cognitive processes decline. Two interesting topics of research in language and late adulthood are off-target verbosity and elderspeak.
 8. Late adulthood is a time of change and adaptation. Developmental tasks during late adulthood include adjusting to retirement and reduced income, death of a spouse, meeting social and civic obligations, and establishing satisfactory physical living arrangements.
 9. Emotional development continues in late adulthood, with the intensity of emotions decreasing, and the experience of positive emotions increasing. Peck theorized that personality goes through three developmental adjustments in late adulthood: ego differentiation versus work-role preoccupation, body transcendence versus body preoccupation, and ego transcendence versus ego preoccupation. There is a shift in attachment style in late adulthood, with more adults developing an avoidant attachment style.
 10. Religiosity throughout life is associated with positive outcomes. In adulthood, individuals higher in religiosity seem to have better physical and mental health, longevity, and coping skills.
 11. Many individuals will lose a spouse in late adulthood. Men and women typically have different issues that they must deal with during this time of grief. Friendships and social support continue to be important throughout late adulthood, with social networks changing in structure.
 12. Retirement is more of a process than a one-time event. Individuals that are financially secure, well-educated, healthy, married, and active in volunteerism or other hobbies adjust best to retirement and experience the greatest satisfaction. After a honeymoon period upon retirement, individuals must seek meaning and validation through volunteer work or hobbies. Eventually, individuals either seek re-employment or complete termination from work activities.
 13. Erikson proposes that people develop a sense of integrity versus despair during late adulthood. Integrity is acquired by completing one's personality integration and coming to terms with the way one's life was lived, the decisions that were made, and the consequences of those decisions. Despair may emerge if this evaluation results in feelings of loss, disappointment, and deep dissatisfaction.

SELF-QUIZ

1. How is the population changing in terms of the percentage of older adults?
2. Describe the age divisions for older adults.
3. What does senescence mean?
4. How does weight and height change in late adulthood?
5. Highlight some changes in the muscular and skeletal systems in late adulthood.
6. What changes do we see in the cardiovascular system in late adulthood?
7. What are some early warning signs for a stroke?
8. Explain the course of Alzheimer's disease.
9. Where are somatic stem cells obtained from?
10. What are some medical reasons why somatic stem cells may be preferable to embryonic stem cells?
11. Define ageism in your own words.
12. How is SOC theory important in understanding cognitive changes in late adulthood?
13. Compare and contrast the three approaches to studying wisdom.
14. What can people do to slow down the decline in attention for complex tasks?
15. How do the posterior attention system and the anterior attention system differ in their attentional processes?
16. Describe parallel processing in late adulthood.
17. List the aspects of memory that show decline and the aspects of memory that remain relatively intact.
18. Compare and contrast the dual-process model of intelligence with the idea of fluid and crystallized intelligence.
19. What are some reasons that reading ability declines in late adulthood?
20. What is the communicative predicament of aging?
21. Describe the developmental tasks of late adulthood.
22. What is meant by affect intensity and how does it relate to late adulthood?
23. How is aging related to affective complexity?
24. Describe the four personality types discussed in the [chapter](#) (i.e., integrated, armored-defended, passive-dependent, and unintegrated).
25. Why might attachment change in late adulthood?
26. What are values?
27. Explain the difference between spirituality and religiosity.
28. Discuss the issues that women and men face in widowhood.
29. What six lifestyle patterns did Cox and colleagues find for older adults?
30. What factors help determine if an individual achieves a sense of integrity versus a sense of despair?

TERMS AND CONCEPTS

TERM	PAGE	TERM	PAGE
Collagen	31	Emphysema	33
Senescence	31	Gout	33
Scoliosis	32	Incontinence	34
Kyphosis	32	Diverticulitis	34
Gingivitis	32	Hiatal hernia	34
Pneumonia	33	Macular degeneration	36

TERM	PAGE	TERM	PAGE
Aneurysm	38	Elderspeak	49
Strokes	38	Off-target verbosity	49
Chronic	39	Inhibitory deficit theory	49
Acute	39	Affective complexity	51
Dementia	39	Affect intensity	51
Senility	39	Ego differentiation versus work-role preoccupation	52
Dopamine	40	Body transcendence versus body preoccupation	52
Parkinson's disease	40	Ego transcendence versus ego preoccupation	52
Alzheimer's disease	40	Integrated	52
Equipotentiality	41	Armored-defended	52
Somatic stem cells	41	Unintegrated	53
Amniotic fluid stem cells	41	Passive-dependent	53
Umbilical cord blood and placental stem cells	41	Religiosity	54
Adult stem cells	41	Spirituality	54
Embryonic stem cells	41	Values	54
Gerontophobia	43	Widowhood	55
Ageism	43	Pre-retirement	58
Late adulthood	43	Honeymoon phase	58
Elderly	43	Disenchantment stage	58
Selection, optimization, and compensation (SOC) theory	44	Reorientation stage	58
Explicit-theoretical approaches	45	Stability stage	58
Implicit-theoretical approaches	45	Termination	58
Philosophical approaches	45	Sense of integrity versus a sense of despair	59
Parallel processing	46		
Anterior attention system	46		
Posterior attention system	46		
Episodic memory	47		
Working memory	47		
Source memory	47		
Explicit memory	47		
Semantic memory	47		
Procedural memory	47		
Implicit memory	47		
Primary short-term memory	47		

