

CHAPTER

17

► PEDIATRICS
GERONTOLOGY

Human Development

After studying this chapter, you will be able to

- 17.1 Describe each stage of human development
- 17.2 Name medical specialists that treat the disorders in each stage of the lifespan
- 17.3 List the diseases and disorders common to each stage of the lifespan



Stages of Development

The time between conception and death is the period of an individual's development. The average *lifespan* (length of life) varies from country to country. Each stage (see Table 17-1) is described in this chapter, as are the specialists who typically treat patients in a particular time in the lifespan. Pathology of the lifespan is also discussed.

Fertilization, Pregnancy, and Birth

Fertilization can occur as the result of sexual intercourse between a male and a female. It may also occur in a laboratory in cases of infertility. However it occurs, fertilization is the union of an egg cell (ovum) with a spermatozoon. (On occasion, more than one egg is fertilized by more than one sperm—producing fraternal twins or triplets—or a single egg divides into identical twins, triplets, quadruplets, and so on.) After traveling through the fallopian tube, the fertilized ovum (also called a *zygote*) is **implanted** or attached to the wall of the uterus. Once attached, the ovum (now called an **embryo** until it reaches 2 1/2 months or 10 weeks) remains *in utero*, or within the uterus, until development and birth. It takes an average of 40 weeks from the time that the ovum is fertilized until birth. This period of development is known as **gestation**. The embryo begins to change during the first 8 weeks of gestation. After 2 1/2 months, the embryo becomes a **fetus**, the developing product of conception prior to birth. For the mother, the 40-week period of gestation is the period known as *pregnancy*. Chapters 10 and 11 cover the female and male reproductive systems.

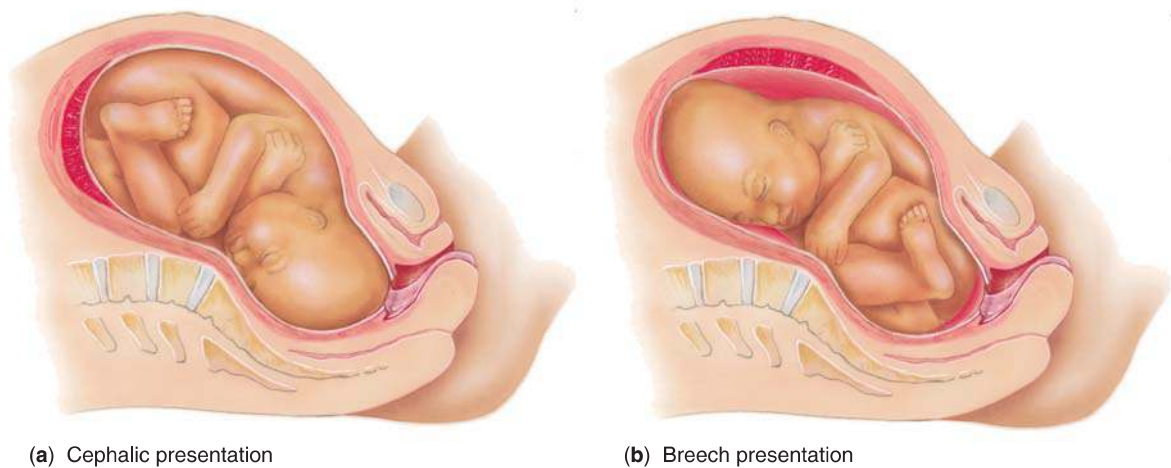
The birth process usually includes a period of **labor**, the process of expelling the fetus and the placenta from the uterus. Labor may end in a vaginal birth. If not, a **cesarean section**, removal of the fetus surgically through the abdomen, is performed. The reasons for performing a cesarean section vary widely, but may include fetal or maternal distress, complications (as in multiple births or premature birth), or extended labor without adequate dilation of the cervix. The fetus, in the majority of circumstances, is in a *cephalic* position

TABLE 17-1 Stages of Human Development

Lifespan Period	Average Time	Developmental Characteristics
fetus	period from 10 weeks of gestation to birth	development of all body systems that are present at birth
neonate	first 4 weeks of infancy	adjustment to life outside the uterus
infancy	first year of life	many physical and emotional developmental strides
toddler	ages 1 to 3	walking, talking, and becoming somewhat independent from caretakers
childhood	ages 3 to puberty	cognitive and physical development, usually including schooling
puberty	about ages 8 to 12	development of secondary sex characteristics
adolescence	period from puberty to full physical maturity	physical maturation and often psychological separation from the family leading to independence
young adulthood	ages 20–39	period of establishment of adult work and lifestyle situations
middle adulthood	ages 40–59	often stressful period of continued career and family development
old age	ages 60 on	period of diminishing physical and, sometimes, mental faculties
oldest old age	ages 90 on	period of late life, often with many physical and emotional difficulties
death	end of life	cessation of cardiovascular, respiratory, and nervous system functions

or head down in the birth canal. A fetus may be positioned in a **breech** position (infant in birth canal with feet or buttocks first) or may be *transverse*, sideways. *Obstetricians*, specialists in **obstetrics**, which includes fertility, pregnancy, and birth, assist in the vaginal birth of a breech baby, or turn a transverse baby so that it can be born vaginally. A breech or transverse baby cannot exit the vagina without being harmed unless it is maneuvered into a position to allow it to come through the birth canal. Often, infants in such positions are at risk during the birth process and are much more likely to be born by cesarean section. Figure 17-1 shows cephalic and breech birth positions.

The period of time immediately after the birth (parturition) of the infant is known as *postpartum*. During this time, a woman may begin to experience a number of symptoms such as sadness, lack of energy, trouble concentrating, anxiety, and feelings of guilt and worthlessness. If these symptoms occur during anytime within the first year after childbirth, it is known as *postpartum depression*. The difference between postpartum depression and the baby blues is that postpartum depression often affects a woman's well-being and keeps her from functioning well for a longer period of time. Postpartum depression needs to be treated by a doctor. Counseling, support groups, and medicines are things that can help. *Postpartum psychosis* is rare. It occurs in 1 or 2 out of every 1000 births and usually begins in



(a) Cephalic presentation

(b) Breech presentation

FIGURE 17-1 Birth position can determine whether a birth is vaginal or by caesarean section. Cephalic presentation (a) is usually vaginal. Breech presentation (b) is often by caesarean section.

the first 6 weeks postpartum. Women who have bipolar disorder or another psychiatric problem called schizoaffective disorder have a higher risk for developing postpartum psychosis.

Infancy

To read more about the Apgar score, go to www.childbirth.org.

A baby, also referred to as a newborn or *infant*, is born. At birth, personnel in the delivery room give the baby an **Apgar score**, a rating at both 1 and 5 minutes after birth for the following: A (activity); P (pulse); G (grimace or reflex); A (appearance of the skin); and R (respiration). The scoring is from 1 to 10. A total score of 7–10 is considered normal; below that, there may be need for special help from medical personnel.

For the first four weeks of life, the infant is referred to as a **neonate** (Figure 17-2). During the neonate period, body functions adjust to living outside the womb: temperature control, digestive system, respiratory system, sensory system, and the beginning of social development all start to change during this period. **Neonatology** is the medical specialty concerned with the care and treatment of neonates with severe health problems or who may have been born prematurely. *Neonatologists* are specialists in neonatology.

The remainder of the infancy period lasts the first year. During the next period, the child is often referred to as a *toddler*. The toddler is a young child who becomes competent at walking, begins to speak, and begins to handle some of the activities of daily living by himself or herself. This occurs in the period between the end of the first year and age three. **Pediatrics** is the specialty that treats children from the neonate stage through adolescence. *Pediatricians* are the practitioners of this specialty.

Childhood

Childhood is the period of life from infancy to puberty. *Puberty* is a sequence of development of secondary sex characteristics beginning around ages 8 to 12. Childhood years vary because puberty may start very early or very late. Also, the onset of puberty is generally earlier in girls than in boys.



FIGURE 17-2 A neonate is an infant under 4 weeks old.

Adolescence

Adolescence is the period of physical maturation, usually between ages 13 and 19. During this time, the secondary sex characteristics fully develop (girls develop breasts, underarm hair, and pubic hair; boys develop facial hair, pubic hair, and underarm hair, and go through a voice change). It is the period when most people start to take the emotional steps that will lead them to be independent of their parents. Adolescents often experience the conflict of being more physically mature than emotionally ready to handle such things as pregnancy and parenthood.

Adulthood

Young adulthood comprises the period from ages 20 to 40. This is usually the period in which adults set up their first homes, become parents, and build their careers. Middle adulthood or *middle age* is the period from ages 40 to 60. Young adults may choose an internist or family practitioner as their primary physician. Many people start to look at alternative or preventive medicine at this stage of their lives (see Chapter 23). During middle adulthood, many physical changes (i.e., menopause, diminution of strength, reduction in hearing ability) occur. Middle adulthood is often the time that disorders are discovered and treatments are begun.

Old Age

Old age, also known as the **geriatric** period, begins at age 60 (or at age 65 depending on who is defining the age groups) and encompasses the years until death. The period of old age is sometimes further divided into *young old* (ages 60-74); *middle old* (75-84) and *oldest old* (ages 85 and older). The quality of life in old age usually reflects your family's genetic history, general health, and emotional attitudes. Some people live well into their 90s or early 100s independently and in good health. People who have such longevity, length of life beyond the average, are often referred to as the oldest old (Figure 17-3). Others may have heart attacks or other illnesses during middle age that lead to an old age that includes many periods of illness and may even include early death. **Gerontology** is the medical specialty that diagnoses and treats disorders present in old age. Gerontologists are specialists in treating ailments of the aging.

Death

Death, the end of life, occurs when the heart, respiratory system, and central nervous system cease functioning. This definition of death is being changed by life-support machines that are able to keep someone with respiratory or other body failure alive indefinitely. Because of the controversies surrounding the use of life-support machines near the end of life, several legal changes have been made in recent years. The actively dying body, without the aid of life support systems, will pass through predictable and symptoms and signs as the systems of the body decline. Palliative measures are comfort measures to provide pain relief comfort as this process progresses.

The practice of **euthanasia**, or assisted suicide, is allowed in certain countries in the world. In the United States, most states forbid this method



FIGURE 17-3 A 101-year-old woman playing piano in a nursing home.

of helping very sick people die comfortably. The field of *bioethics*, study of ethical medical treatment and research, has grown in the last part of the twentieth century.

Many people express their wishes regarding care at the end of life. Two legal documents called *advanced directives* state the patient's wishes about decisions for future health care. The first directive, a *living will*, is signed by a patient who prefers to be allowed to die rather than be kept alive by artificial means if there is no reasonable expectation of recovery. The second is a *durable power of attorney*, a document which appoints a *health care proxy*, a person to make decisions for the patient in case of disability. These directives may also include a *DNR* (do not resuscitate) order, which means that the patient is not to be resuscitated if breathing stops at a certain stage of illness. The movement toward *hospice*, a program of supportive care for dying patients in a nonhospital setting, has spread to all parts of the country. Hospice provides end-of-life pain relief (called *palliation*) and care (called *palliative care*), but does not try to artificially prolong life or resuscitate a patient who has stopped breathing.

VOCABULARY REVIEW

In the previous section, you learned terms about stages of development. Before going on to the exercises, review the terms below and refer to the previous section if you have any questions. Pronunciations are provided for certain terms. Sometimes information about where the word came from is included after the term. The etymologies (word histories) are for your information only. You do not need to memorize them.

Term	Definition
Apgar score After Virginia Apgar [ÁP-găr] (1909-1974), U.S. physician	A rating of a newborn's Activity, Pulse, Grimace, Appearance, and Respiration.
breech [brēch]	Birth canal position with feet or buttocks first.
cesarean [sě-ZĀ-rē-ăn] section From Latin <i>lex caesaria</i> , Roman law	Surgical removal of the fetus through the abdomen.
embryo [ĔM-brē-ō] Greek <i>embryon</i>	Fertilized ovum until about 10 weeks of gestation.
euthanasia [yū-thă-NĀ-zhē-ă] eu-, good + Greek <i>thanatos</i> , death	Assisting in the suicide of or putting a person with an incurable or painful disease to death.
fertilization [FĔR-tīl-ī-ZĀ-shŭn]	Union of an egg cell(s) with sperm.
fetus [FĔ-tŭs]	Developing product of conception from 8 weeks to birth.
geriatric [JĔR-ē-Ā-trīk]	Of or relating to old age.
gerontology [JĔR-ŏn-TŎL-ō-jē] geronto-, old age + -logy, study of	Medical specialty that diagnoses and treats disorders of old age.
gestation [jĕs-TĀ-shŭn] Latin <i>gestation</i>	Period of fetal development from fertilization until delivery.

Term	Definition
implant [ĭm-PLĂNT]	To attach to the lining of the uterus in the first stage of pregnancy.
labor [LĀ-bōr]	Process of expelling the fetus and placenta from the uterus.
neonate [NĒ-ō-nāt] neo-, new + Latin <i>natus</i> , born	Infant under 4 weeks old.
neonatology [NĒ-ō-nā-TŌL-ō-jē] neonat(e) + -logy	Medical specialty that diagnoses and treats disorders of neonates.
obstetrics [ŏb-STĒT-rĭks]	Medical specialty that guides women throughout fertilization, pregnancy, and birth.
pediatrics [PĒ-dē-ĀT-rĭks] From Greek <i>pais</i> , child + <i>iatrikos</i> , of medicine	Medical specialty that diagnoses and treats disorders in children from infancy through adolescence.

CASE STUDY

Spanning the Generations

Maria and Paul Adams were overjoyed upon discovering Maria's pregnancy at age 36. Maria's mother had had her children later in life. She was now turning 77, living alone since her husband died. Maria and Paul are part of what is called the "sandwich" generation—those people caring for their young children and their older parents at the same time. Maria's mother had a myocardial infarction a few years ago. She lives in the same town as Maria, who does her grocery shopping, takes her to doctors, and visits with her about four times a

week. Maria also works as a systems analyst. Her paycheck is important to the couple, and Maria plans to go back to work after several months of pregnancy leave.

Critical Thinking

1. What stages of life will Maria and her child be going through simultaneously?
2. Will Paul and Maria need a neonatologist for their child?

STAGES OF DEVELOPMENT EXERCISES

Know the Lifespan

Write the stage of development of lifespan period(s) that best fits each description or profession.

3. In utero _____
4. Neonatologist _____
5. Secondary sex characteristics _____
6. First walking _____
7. Early schooling _____
8. Cessation of body functions _____
9. Establishment of adult work _____
10. Physical maturation _____
11. Two weeks old _____
12. Obstetrician _____
13. Gerontologist _____

Pathology of the Lifespan

The majority of diseases occur at the beginning (infancy) and at the end (old age) of life. Diseases or disorders may be determined or caused by genes (biological inheritance), environmental causes (as exposure to a virus or bacteria), or trauma (sudden, massive injury). A *geneticist* is a specialist in **genetics** (the science of biological inheritance) who can counsel people with genetic abnormalities who wish to have children. Some congenital diseases (severe spina bifida, anencephaly) are devastating. In some cases, geneticists can predict the odds of the newborn inheriting a gene. It is also possible to observe (via ultrasound) the fetus during its development. Fetuses are treated **in utero** (while in the uterus), either with medication or surgically, for a number of conditions. In addition, blood tests reveal genetic clues to disorders carried by the parents (Figure 17-4).

Table 17-2 lists some diseases common to the various stages of the lifespan. Some of these diseases appear at all stages of the lifespan, but occur most frequently in a particular stage.

TABLE 17-2 Pathology in Human Development

Lifespan Period	Average Time	Some Diseases Most Prevalent at Each Stage (See body systems chapters for further discussion of pathology.)
fetus	during 40 weeks of gestation	hydrocephaly, spina bifida, Rh incompatibility (erythroblastosis fetalis)
neonate	first 4 weeks of infancy	jaundice, diarrhea, allergies, SIDS, hydrocephaly, spina bifida, premature birth, hyaline membrane disease, Down syndrome, Tay-Sach's disease, sickle cell anemia, pyloric stenosis
infancy	first year of life	Down syndrome, SIDS, otitis media, strep throat, allergies, diarrhea
toddler	ages 1 to 3	otitis media, strep throat, roseola, allergies, diarrhea
childhood	ages 3 to puberty	strep throat, otitis media, and if not vaccinated, measles, mumps, chicken pox, polio
puberty	about ages 8 to 12	same as during childhood
adolescence	period from puberty to full physical maturity	some childhood diseases, plus emotional problems (such as depression and anxiety)
young adulthood	ages 20-39	schizophrenia, multiple sclerosis, early cancers (prostate, cervical, uterine, and breast)
middle adulthood	ages 40-59	heart disease, stroke, cancer, Parkinson's disease, Alzheimer's disease, osteoporosis
old age	ages 60 on	same as middle adulthood plus senile dementia, depression
oldest old age	ages 90 on	same as old age
death	end of life	cessation of cardiovascular, respiratory, and nervous system functions

Diseases of Infancy and Childhood

Neonates born **prematurely**, after less than 37 weeks of gestation, often have underdeveloped lungs and other problems. Advances in neonatology save many premature infants. Birth after 40 weeks of gestation may also cause or indicate fetal problems, including high fetal weight.

Infants may die suddenly in an unknown manner (**sudden infant death syndrome** or **SIDS**), usually while sleeping. Safety measures that can prevent some suffocation deaths and/or respiratory problems are to place the infant on its back to sleep, avoid pillows or stuffed animals in the crib, and to avoid smoking in the house. Infants may also experience trauma (as in falls) or may contract infections (such as streptococcus or strep throat).

As children grow, they experience many of the diseases of the body systems covered in each of the body systems chapters in this book. Some childhood diseases help to strengthen the immune system for later life. For example, a childhood bout with chicken pox usually offers lifelong immunity against a disease that can have much more devastating effects in older people.

Diseases of Adulthood

Middle age is often the period during which the stress and wear and tear of daily life begin to take their toll. In this period, particularly, an unhealthy lifestyle can bring on major diseases. A high-fat diet can raise cholesterol, a major risk factor for coronary artery disease. Smoking increases the risk of heart disease and lung cancer. Lack of exercise can be a major factor in cardiovascular disease. Many diseases in this period can be prevented with systematic attention to lifestyle issues and to early warning tests, such as mammograms and PSA tests. The diseases of middle age usually worsen in the next stage of life.

Diseases of Old Age

Most of the pathology in life takes place in old age, with the wearing down of bone, the weakening of the musculoskeletal structure, and the diminishing of the central nervous system. Many doctors and patients focus on **preventive medicine**, a medical specialty concerned with preventing disease. Prevention may include lifestyle changes, medications (as tamoxifen for women with a family history of breast cancer), or frequent checkups (as for people with previous cancers). Newer drugs based on stem cells are helping to cure or manage some devastating diseases.

At the end of life, death is declared by a medical person. The exact definition of death varies but most states use the standards set forth in the federal Uniform Determination of Death Act that was proposed by a presidential commission. Most states have adopted two criteria for brain death—cessation of circulatory and respiratory functions, and irreversible cessation of brain function, including brain stem function. A physician checks for reflexes and responses before declaring brain death.

The March of Dimes (www.modimes.org) raises awareness about and raises money for research on birth defects.

Go to the American SIDS Institute's Web site (www.sids.org) and find out what current research has concluded about SIDS.

VOCABULARY REVIEW

In the previous section, you learned terms relating to the pathology of the lifespan. Before going on to the exercises, review the terms below and refer to the previous section if you have any questions. Pronunciations are provided for certain terms. Sometimes information about where the word came from is included after the term. The etymologies (word histories) are for your information only. You do not need to memorize them.

Term	Definition
genetics [jĕ-NĔT-ĭks] From Greek <i>genesis</i> , origin	Science of biological inheritance.
in utero [ĭn YŪ-tĕr-ō] Latin	Within the uterus; unborn.
premature [PRĒ-mă-chŭr] Latin <i>praematurus</i> , too early	Born before 37 weeks of gestation.
preventive medicine	Medical specialty concerned with preventing disease.
sudden infant death syndrome (SIDS)	Death of an infant, usually while sleeping, of unknown cause.

CASE STUDY

Dealing with Complications

Maria's age prompted her obstetrician to ask whether she wanted amniocentesis, a test for fetal abnormalities. Maria decided to have the test. It came back normal. Meanwhile, Maria's mother had another heart attack. Maria and her mother decided to look for a living situation that would provide independence for her mother while providing care as necessary. They settled on an assisted living complex in the next town. This seemed to be ideal—Maria would have fewer tasks, and her mother would be around people all the time.

Around the beginning of Maria's seventh month of pregnancy, a routine visit to the doctor showed that her blood pressure had spiked to dangerous levels. Maria had a kidney infection and was dealing with a very

stressful situation. She also had noticed some vague cramps. The kidney infection was treated, but, in addition, Maria was told to cut her work hours and spend more time resting in bed in preparation for the final stage of pregnancy. The cramps were a sign of possible early labor.

Critical Thinking

14. What is the danger to the fetus if Maria's obstetrician is not able to prevent early labor?
15. What are some of the abnormalities that might be seen on an ultrasound as opposed to those tested for in amniotic fluid?

PATHOLOGY OF THE LIFESPAN EXERCISES

Following the Stages of Life

Write the lifespan stage(s) during which each disease is most likely to occur. You may want to review Table 17-2 before proceeding with this exercise.

16. senile dementia _____
17. chicken pox _____
18. SIDS _____
19. Alzheimer's disease _____
20. erythroblastosis fetalis _____
21. Down syndrome _____
22. Parkinson's disease _____
23. spina bifida _____

TERMINOLOGY IN ACTION

For each of the following events, conditions, or diseases, put a number in the space to match the period of the lifespan (1 = birth to age 3; 2 = ages 3–12; 3 = ages 13–19; 4 = ages 20–40; 5 = ages 41 to 59; and 6 = 60 and older) in which it most often occurs. You may have to refer to earlier chapters on body systems if you do not know some of the answers.

24. osteoporosis _____

25. SIDS _____

26. menopause _____

27. acne _____

28. chicken pox _____

USING THE INTERNET

Go to the Hospice Foundation of America's Web site (<http://www.hospicefoundation.org>) and write a short paragraph on the goals of hospice.

CHAPTER REVIEW

The material that follows is to help you review this chapter.

Find a Match

Match the terms in the left-hand column with the correct definition in the right-hand column.

- | | |
|-----------------------------|--------------------------------------------------------------------|
| 29. ___ preventive medicine | a. diagnoses and treats disorders of infants up to four weeks old |
| 30. ___ neonatology | b. diagnoses and treats disorders of old age |
| 31. ___ pediatrics | c. guides women throughout fertilization, pregnancy and birth |
| 32. ___ obstetrics | d. diagnoses and treats disorders from infancy through adolescence |
| 33. ___ gerontology | e. concerned with preventing disease |

Know the Meaning

Write the definitions for each of the following terms.

- | | |
|--------------------------------|--------------------------------------|
| 34. bioethics: _____ | 37. durable power of attorney: _____ |
| 35. advanced directives: _____ | 38. health care proxy: _____ |
| 36. living will: _____ | |

Check Your Knowledge

Circle T for true or F for false.

39. The birth process usually includes a period of implantation, the process of expelling the fetus and the placenta from the uterus. T F
40. At birth, a baby is rated using an Apgar score, which is assessed at 1 and 10 minutes after birth. T F
41. The practice of euthanasia, or assisted suicide, is allowed in certain countries of the world. T F
42. A neonate that is born after less than 37 weeks of gestation is considered premature. T F
43. A fetus presenting in a cephalic presentation must always be delivered by Caesarean section. T F

Find a Match

Match the terms in the left-hand column with the correct definition in the right-hand column.

- | | |
|------------------------|--------------------------------------------------|
| 44. ___ puberty | a. first 4 weeks of infancy |
| 45. ___ oldest old age | b. end of life |
| 46. ___ childhood | c. ages 90 on |
| 47. ___ death | d. ages 1 to 3 |
| 48. ___ toddler | e. period from puberty to full physical maturity |
| 49. ___ adolescence | f. ages 3 to puberty |
| 50. ___ neonate | g. ages 8 to 12 |

DEFINITIONS

Define the following terms. Review the chapter before starting. Make sure you know how to pronounce each term as you define it.

WORD

- | | | |
|------------------------------------------|--------------------------------------|--------------------------------------------|
| 51. Apgar score [ÄP-gär] | 59. geriatric [JĚR-ĕ-Ä-trĭk] | 66. neonatology
[NĚ-ō-nā-TÖL-ō-jĕ] |
| 52. breech [brĕch] | 60. gerontology
[JĚR-ön-TÖL-ō-jĕ] | 67. obstetrics [öb-STĚT-rĭks] |
| 53. cesarean [sĕ-ZÄ-rĕ-än] section | 61. gestation [jĕs-TÄ-shŭn] | 68. pediatrics [PĚ-dĕ-ÄT-rĭks] |
| 54. embryo [ĚM-brĕ-ō] | 62. implant [ĭm-PLÄNT] | 69. premature [PRĚ-mä-chŭr] |
| 55. euthanasia [yŭ-thä-NÄ-zhĕ-ä] | 63. in utero [ĭn YŪ-tĕr-ō] | 70. preventive medicine |
| 56. fertilization
[FĚR-tĭl-ĭ-ZÄ-shŭn] | 64. labor [LÄ-bör] | 71. sudden infant death syndrome
(SIDS) |
| 57. fetus [FĚ-tŭs] | 65. neonate [NĚ-ō-nät] | |
| 58. genetics [jĕ-NĚT-ĭks] | | |

Name _____ Date _____

Chapter 17: Test of the Stages of Human Development (20 questions—1 pts. each)

Fill in the blanks using terms learned in Chapter 17 of the textbook. Terms may be used more than once.

1. A child from age 1 to 3 is considered a _____.
2. Sexual intercourse may result in _____.
3. Ages 40–59 is the period of _____ adulthood.
4. An ovum is also known as a(n) _____.
5. The period between about age 8 to 12 is when _____ occurs.
6. The study of old age is _____.
7. The oldest old are older than age _____.
8. The embryo develops into a _____ after eight weeks of gestation.
9. Birth position with the head down in the birth canal is _____.
10. Birth position with the feet first is _____.
11. Ages 60–89 is the period of _____.
12. Specialists in fertility, pregnancy, and birth are _____.
13. During puberty, _____ sex characteristics develop.
14. An infant 4 weeks old or younger is called a _____.
15. The process of readying the fetus for expulsion is called. _____.
16. Most labors end in a(n) _____ birth.
17. The period from puberty to full physical maturity is _____.
18. Removal of the fetus through the abdomen is a(n) _____.
19. The period of fetal development is _____.
20. Specialists in the treatment of neonates are _____.