

Human Development



Objectives

After reading this chapter, you will be able to:

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

Stages of Development

The period of an individual's development is the time between conception and death.

Fertilization, Pregnancy, and Birth

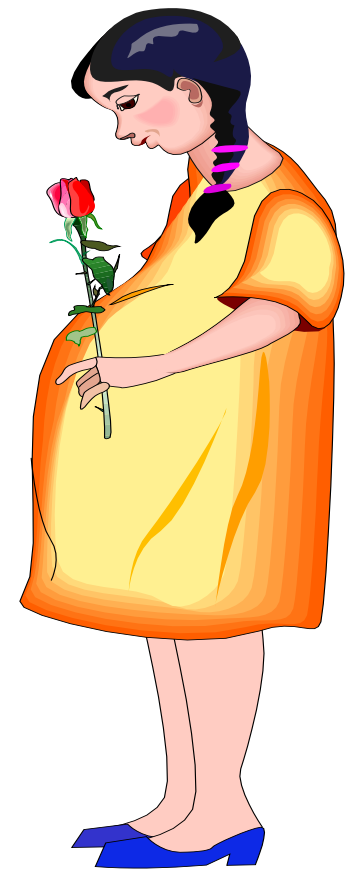
- **Fertilization is the union of an egg cell with a spermatozoon**

- **The fertilized ovum or embryo attaches to the wall of the uterus**

- **Gestation is the period from fertilization to birth which is approximately 40 weeks**

- **The period in which the product of conception develops is known as pregnancy**

- **After 8 weeks of gestation, the embryo becomes a fetus**



Stages of Development

Birth Process

- Usually includes a period of labor
- Labor may end with either a vaginal birth or **cesarean** delivery

Reasons for a Cesarean delivery

- Maternal distress
- Fetal distress
- Multiple births
- Extended labor

- **Obstetricians** specialize in fertility, pregnancy, and birth



Stages of Development



Fetal Presentations

• **cephalic**

• **transverse**

• **breech**

Stages of Development

Infancy

- A baby or infant is referred to as a **neonate** for the first four weeks of life
- **Neonatologists** specialize in caring for neonates with severe health problems
- **Pediatricians** treat children from the neonate stage through the teenage years



Birth (neonate)



Infancy



Toddler

Stages of Development

Childhood

Period from infancy to puberty

Infant



- The first year of life
- Makes many physical and emotional strides

Childhood

- Age 3 to puberty
- Puberty is the development of sex characteristics between 8 to 12 years



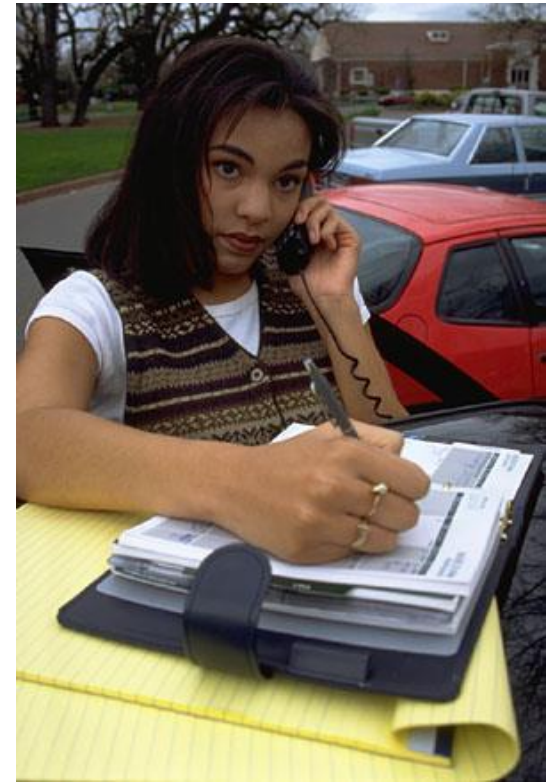
Toddler

- Age 1 to 3
- Becomes competent at walking, talking, etc.

Stages of Development

Adolescence

- **Period of physical maturation**
- **Usually between ages 13 to 19**
- **Experience conflict of being more physically mature than emotionally**
- **Secondary sex characteristics fully develop**



Boy Secondary Sex Characteristics

- **facial hair**
- **underarm hair**
- **pubic hair**
- **voice changes**

Girl Secondary Sex Characteristics

- **breasts**
- **underarm hair**
- **pubic hair**

Stages of Development

Adulthood

Young Adulthood

- Ages 20 to 40
- Period where individuals set up their first homes, build careers, and become parents

Middle Adulthood

- Ages 40 to 60
- Physical changes such as menopause, decreased hearing, and other conditions may prompt individuals to choose an **internist** or **family practitioner**



Stages of Development

Old Age

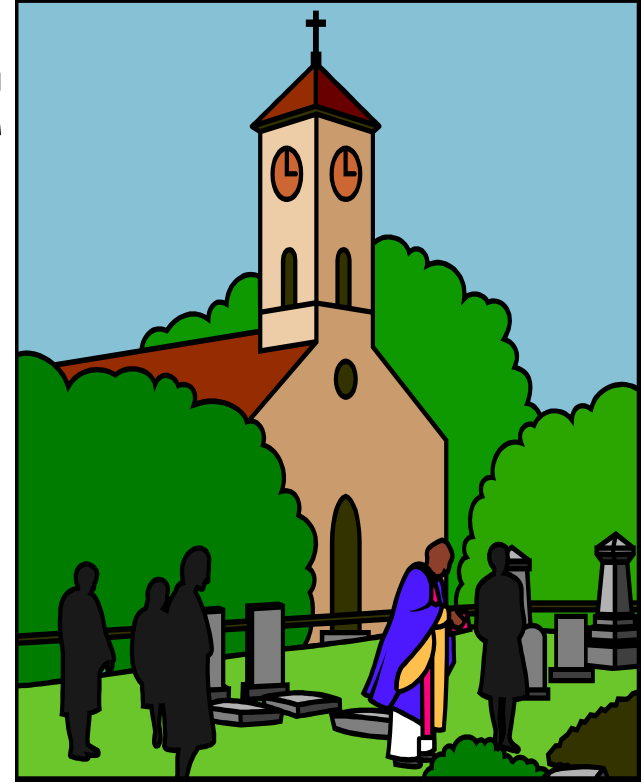
- Ages 60 until death
- Gerontology** is the medical specialty that diagnoses and treats disorders present in old age



Stages of Development

Death

- **The end of life occurs when the heart, respiratory system and central nervous system stop functioning**
- **Today there are life support machines that can prolong life**
- **Euthanasia** or assisted suicide is practiced in certain countries
 - **Living Wills** are legal documents signed by a patient that explains their preferences regarding medical treatment if there is no reasonable expectation of recovery
 - **Bioethics** is the study of ethical medical treatment and research



Pathology of the Lifespan

Infancy and old age are the times for the majority of diseases to occur.

Pathology in Human Development

Fetus

•Genetic and congenital disorders occurring during the 40 weeks of gestation

Fetal Disorders

- Rh incompatibility
- Spina bifida
- Hydrocephaly
- Anencephaly

Pathology of the Lifespan

Pathology in Human Development

Neonate

- Neonates born before 37 weeks gestation often have underdeveloped lungs and other body systems

Neonatal Disorders

- • Jaundice
- • SIDS
- • Down Syndrome
- • Tay-Sach's Disease
- • Sickle Cell Anemia
- • Pyloric Stenosis

Pathology of the Lifespan

Pathology in Human Development

Infancy

- While sleeping, infants may die suddenly in an unknown manner

Infant Disorders

- • Down Syndrome
- • SIDS
- • Otitis media
- • Strep throat
- • Allergies
- • Diarrhea

Pathology of the Lifespan

Pathology in Human Development

Toddler Diseases

- •Otitis media
- •Strep throat
- •Roseola
- •Allergies
- •Diarrhea

**NOTE: Diseases of
puberty are the
same as childhood
diseases**

Childhood Diseases

- •Strep throat
- •Otitis media

If not vaccinated:

- - Measles
- - Mumps
- - Chicken pox
- - Polio

Pathology of the Lifespan

Pathology in Human Development

Adolescent Diseases

- • **Some childhood diseases**
- • **Emotional problems such as:**
 - - **anxiety**
 - - **depression**

Young Adulthood Diseases

- • **Schizophrenia**
- • **Multiple sclerosis**
- • **Early cancers:**
 - - **prostate**
 - - **breast**
 - - **cervical**
 - - **uterine**

Pathology of the Lifespan

Middle Adulthood Diseases

- •Heart disease
- •Stroke
- •Cancer
- •Parkinson's disease
- •Alzheimer's disease
- •Osteoporosis

Diseases of Old Age

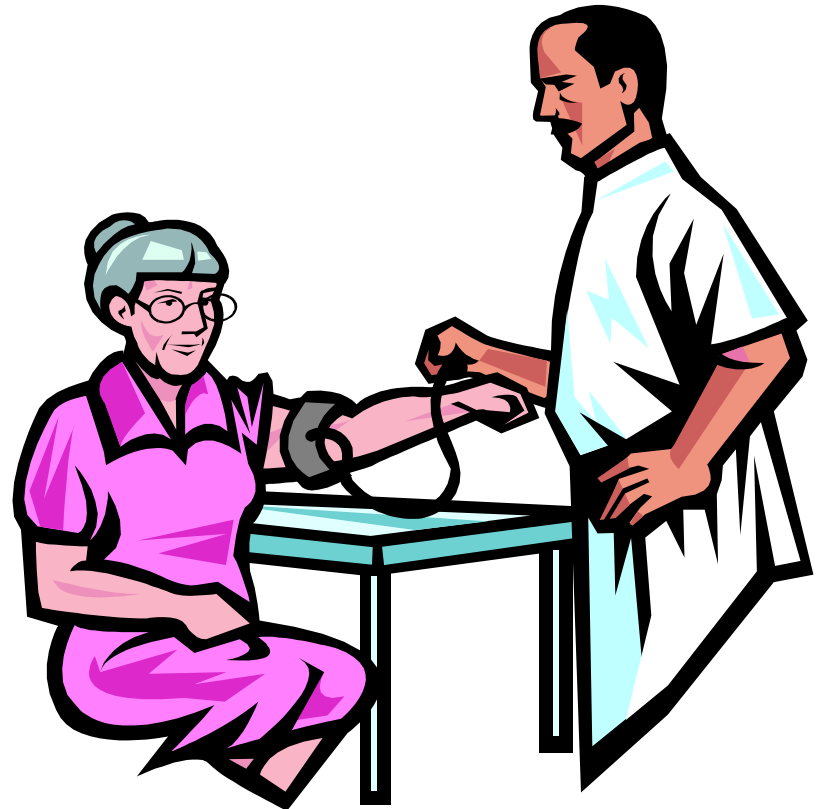
- •Same as middle adulthood
- •Senile dementia
- •Depression

Pathology of the Lifespan

Many doctors and patients focus on preventive medicine which is concerned with preventing diseases.

Preventive Strategies

- **Frequent check-ups**
- **Screenings such as:**
 - mammograms
 - PSA tests
- **Low-Fat diet**
- **Exercise**
- **Smoking cessation**
- **Medications**



Apply Your Knowledge

Jane is 5 months pregnant. Which of the following terms best describes her baby's stage of development?

A. infant

B. embryo

C. fetus

Answer: C. fetus

Apply Your Knowledge

Martha is 8 months pregnant. She would more than likely be under the care of which of the following physicians?

A. Neonatologist

B. Obstetrician

C. Internist

Answer: B. Obstetrician

Apply Your Knowledge

Identify the correct **lifespan** period that best describes these **developmental characteristics**.

Developmental Characteristic

Puberty

Development of secondary sex characteristics

Fetus

Development of all body systems

Toddler

Becoming somewhat independent from caretakers