# *University of Mosul*

# *College of Nursing*

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# *Human Growth & Development*

Year Two/semester One

General Nursing Program

**2021-2022**

# STUDENT GUIDLINES

## Introduction

Welcome to the Second Year-Semester One in the General Nursing Program:

**Course: Human Growth & Development:** is one of the Nursing course for the general nursing curriculum. The syllabus attached is designed to provide each student with an explanation to the course content. Unite objective are required reading materials for the course.

## Instructions for use of Student's Course Books

- Each Class Session identifies the content that will be covered in that class and the activities expected by the students.
- During the Class Session, ask for explanations of term that are not clear.
- You are advised to participate in class room discussion.
- You are advised to complete she study Questions given at the end of each unit that will help you to fully understand the course material.
- You are advised to complete the laboratory requirements for this course

## Human Growth and Development

**1. Course Title**: Human Growth and Development

**2. Course Number:** (108)

**3. Credit Hours:** Total 0f (4) credits

Theory (1) credits

Lab. (2) credits

Clinical ( 3) credits

**4. Course Calendar**: Total (6) hours weekly of (15) weeks

Theory (3) hrs

Lab. (-) hrs

Clinical (3) hrs

**5. Placement:** Third year /First semester

**6. Course Description**:

This course will provide the students with basic knowledge related to human growth & development. It deepens their understanding about the human characteristics, needs, & their normal growth and developmental problems during different stages of human life.

## 7. Course Goals:

**At the completion of this course the students will be able to:**

1. Define the concepts of growth, development, and maturation, and differentiate them.
2. Understand psychosocial theories related to human growth and development.
3. Identify the patterns of growth and development.
4. State the principles of child development with examples to show the understanding of the principles.
5. Describe the physical, social, emotional, spiritual and mental development that take place during different stages of the human beings life.
6. Measure and records a particular weight, height, head circumference on a growth chart, In addition to use of Denver development screening test.
7. Explain the stages of growth and development throughout the human being life cycle.
8. Identify developmental problems the Individual face during different stages of growth and development.
9. Discuss the role of the peer group, play, school and friends on the socialization of early and middle childhood and adolescence periods.
10. Utilize the knowledge gained from the study of human growth and development in nursing care of individuals.

## The Theoretical Content

## 8. Course Outline:

### Part I: Overview of normal growth and development:

1.1. Definition of growth, development, and maturation.

Patterns of growth and development.

Stages of growth and development.

Prenatal period (embryonic stage).

1.2. Infancy period.

1.3. Early childhood period.

1.4. Middle child hood (school age) period.

1.5. Adolescence period.

1.6. Adulthood period.

1.7. Elderly period.

### Part 11: Factors Influences on growth and development

2.1. Hereditary factors.

2.2.Genetic potentials.

2.3.Environmental factors.

2.4.Socioeconomic.

2.S.Nutrition.

2.6.Exposure to teratogens.

2.7.Endocrine functioning.

2.8.Infectious diseases and accidents

**Part Ill: Growth and development Measurement**

3.1. Growth chart (growth monitoring).

3.2. Measurement techniques.

3.3. Denver development screening test (DDST).

3.4. Measurement of height, weight, head circumference,

*3.5.* Chest circumference, thickness of skin fold, body mass index, & arm circumference

**Part IV: Developmental theories:**

4.1. Theoretic Foundations of personality development

4.2. Theoretic Foundations of mental development

**Part V: Midterm Examination**

**Part VI: Development implications**

6.1. Genetic codes.

6.2.Fetal growth and development (Development from conception to birth)

6.3.Zygote to new-born.

6.4.The germinal period.

6.5.The period of embryo.

6.6.The period of fetus.

**Part VII: Infancy period**

7.1.Physical characteristics of new-born baby.

7.1.1.Birth problems and later handicapped.

7.1.2.Sensory development.

7.1.3.Central nervous system.

7.2.The infant (infancy period)

7.2.1.Physical characteristics.

7.2.2. Cognitive development.

7.2.3.Psychosocial development.

**Part VIII: Early childhood Period**

8.1. Toddler and preschool Development

8.2.-Biophysical development.

8.3.-Psychosocial development.

8.4.-Moral development.

8 .5.-Cognitive and Language development.

8.6.-Social and emotional development.

**Part IX: Middle childhood and latency period (the school age)**

9.1. Biophysical development.

9.2. Psychosocial development.

9.3. Moral and spiritual development.

9.4. Cognitive development.

9.5. School age need.

9.6. Developmental problems during school age.

**Part X: Midterm Examination**

**Part XI: Adolescence period**

11.1. Biophysical development.

11.2. Cognitive and psychosexual development.

11.3. Moral and spiritual development.

11.4. Common needs during adolescence period.

11.5. Communication.

## The Clinical Content

- Well baby clinic (20) hrs.
- Nursery school (8) hrs.
- Kindergarten (8) hrs.
- Schools (8) hrs.
- Nursing homes (8) hrs.
- Visit of the nutritional research institute (8) hrs.

**10. Learning Resources:**

Scale, tape measurement, calibers, growth chart, Denver Development screening test (chart), raisin, ball, different Animals' pictures.

**11. Teaching / Learning Strategies:**

Lectures, discussions, role playing, field trips.

## 12. Students Evaluation:

| | |
|---|---|
| 1st theory exam | 20% |
| 2nd theory exam | 20% |
| Project | 5% |
| Class activities | 5% |
| Final theory exam | 35% |
| Final clinical exam | 15% |
| Total | 100% |

## 13. References

Required text books and reading list:


1. Hockenberry Marilyn J., Wilson David: Wong's Nursing Care of Infants and Children. Canada. Elsevier Inc. 2015.
2. Pillitteri Adele: Maternal & Child Health Nursing: Care of the Childbearing & Childrearing Family. 6 Editions. China. Pillitteri Adele. 2010.
3. Rudd Kathryn and Kocisko Diane M.: PEDIATRIC NURSING. The Critical Components of Nursing Care. United States of America,. Davis Company, 2014.

4. Feldman, Robert S., Development Across the life Span 3rd ed., New Jersey, Pearson Upper Saddle River, 2005.
5. Susan L. Ward ,Pediatric Nursing Care Best Evidence-Based Practices, Ist. ed.,F. A. Davis Company 1915 Arch Street Philadelphia fadavis.com 2014 .

In addition to the above, the students will be provided with handouts by the lecturer.

**Project (written paper)**

Choose one of the following topics for the subject of the paper:

1.
2.
3.
4.
5.

**Guidelines for writing the paper**

- Write a 100- 150 word paper explaining one of the above concepts. Give illustration where required.
- Contents of the student course book are not allowed to use.
- Use at least three references from the library.
- You are free to use any other resources for completion of this paper.
- A list of references should be provided as policy.

- Type the report, Font style: Time New Roman, size,14.
- Use A4 Plain paper to print the report.
- Copy- paste strategy will never accepted.
- The paper is due as per the teacher's request.

**Criteria for evaluation of Written Paper**

| SN | Criteria | Marks |
|---|---|---|
| 1. | Introduction | 1 |
| 2. | Contents with illustration | 5 |
| 3. | Conclusion | 1 |
| 4. | Tile page | 1 |
| 5. | References/Resources used | 1 |
| 6. | Organization ,Neatness, Language | 1 |
| Total | | 10 |

**Prepared by:**


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2. Dr. Luay Amjed Muhmood PhD of Science in nursing Lecturer


**Date prepared:** September/2020

# Human Growth and Development

## Part I: Overview of normal growth and development

- Definition of growth, development, and maturation.
- Patterns of growth and development.
- Stages of growth and development.
- Prenatal period (embryonic stage).
- Infancy period.
- Early childhood period.
- Middle child hood (school age) period.
- Adolescence period.
- Adulthood period.

### Learning Objectives

**At the end of this part , the student should be able to:**

1. Define concepts.
2. Identify the patterns of growth and development.
3. List the stages of growth and development.
4. Describe the following periods of growth and development.
   - Prenatal period (embryonic stage).
   - Infancy period.
   - Early childhood period.
   - Middle child hood (school age) period.
   - Adolescence period.

## Overview of Human Growth and Development

### Human Growth and Development:

A baby's growth and development begin inside the uterus. In fact, the baby most rapid rate of growth occurs during the first four months of the pregnancy. After birth, she continues to grow rapidly. Each baby's pattern of growing and developing is unique, influenced by gestational age at birth, birth size, body type, and general state of health, quality of diet and exercise, and the sizes and growth patterns of the parents.

### Rate of Growth

During the first few days after birth, we can expect the baby to lose 6 - 10 % of her birth weight. Most of the weight lost is in the form of extra body water. The mother should plans to breast-feed. The first milk, or colostrum, albeit scanty, is high in protein and sustains the baby as milk supply increases.

After three to four days, the baby begins to regain weight and should attain or surpass the birth weight by 10 -14 days.

At the first year, the growth rate further tapers. During the second year of life, appetite sometimes diminishes as physical activity increases, resulting in temporary plateaus in growth.

**Growth**: Are the quantitative (measurable) changes in physical size of the body and its parts, such as increases in cells, tissues, structures, and systems.

**Growth**

- Physical increase in whole or any of its part of the body
- Parameters of a child's growth can be easily measured with accuracy through the following:
    1. Weight
    2. Head circumference
    3. Length or height
    4. Bone density
    5. Dentition

1- **Weight**

- Important indicator of child's nutritional status and general growth
- Used to calculate medication dosages for children
- Should be measured at every visit.

**2- Head circumference**

- Related to intracranial volume
- Normal brain growth = expected rate of increase in head circumference
- Abnormal lags may indicate serious problems

### 3- Length or height

- Compared with head circumference and weight measurement for overall indicator of physical growth
- Length is measure infant from crown of head to heel when place child in recumbent position and during the first two years
- Standing height measurement for children three years or older.

### 4- Dentition

-- Refers to eruption of teeth and follows sequential pattern

-- Eruption of primary teeth – 6-30 months

i. Twenty primary teeth
ii. Eruption of permanent teeth - around 6 years of age
iii. Normally 32 permanent teeth

**Development:** refers to behavioral changes in functional abilities and skills. Thus, developmental changes are qualitative, that is, not easily measured.

### Types of growth and development

Types of growth:

- Physical growth (Ht, Wt, head & chest circumference)

- Physiological growth (vital signs …)

Types of development:

- Motor development

- Cognitive development

- Emotional development

- Social development

**Patterns of Growth and Development (Directional trends): include**

1. **Cephalocaudal:**

   Cephalocaudal or head to tail direction. The head region starts growth at first, following by which other organs starts developing.

   **Ex**.:

   - Infant achieve structural control of the heads before they have control of their trunks and extremities.
   - Use their eyes before their hands.
   - Gain control of their hands before they have control of their feet.

2. **Proximodistal:**

   Proximodistal or near-to-far, trend applies from the midline-to-peripheral.

   **Ex**.:

   - The spinal cord develops before outer parts of the body.
   - The child's arms develop before the hands
   - The hands and feet develop before the fingers and toes.

3. **Differentiation:**

   "General to specific" or simple to complex progression of achievement of development milestones

   **Ex**.:

   - The child learns to crawl before learning to walk.

**Importance of Growth and Development for Nurses:**

- Knowing what to expect of a particular child at any given age.
- Gaining better understanding of the reasons behind illnesses.
- Helping in formulating the plan of care.
- Helping in parents' education in order to achieve optimal growth & development at each stage.

**Stages of Growth and Development**

| Stage | sub stage | Age |
|---|---|---|
| Pre-natal | Embryonic | conception - 8 w |
| | Fetal stage | 8-40 or 42 w |
| Infancy | Neonatal | Birth to 27 or 28 days. |
| | Infancy | I month to 12 months. |
| Early childhood | Toddler | I year to 3 years. |
| | Pre-school age | 3 years to 6 years |

| | | |
|---|---|---|
| Middle childhood | (School age) | 6 years to 12 years |
| Later childhood | Pre-pubertal | 11 years to 13 years. |
| | Adolescence | 13-to 18 years |
| Adulthood | Young adult | 18-35 years |
| | Middle adult | 35-55 or 65 years |
| | Old adult | 65- above |

**Stages of Growth and Development**

**Prenatal stage** is refers to the process in which a baby develops from a single cell after conception into an embryo and later a fetus.

**Infancy stage** is the first year of life after birth. For the first month after birth is called a newborn, after that call infancy.

**Early Childhood stage** is the foundation period of life covering 2 - 6 years of our life. It is a period of rapid - physical, mental, emotional, social and language development of a child. Apart from these major developmental aspects such as, development of - understanding, moral values, some common interests.

**Middle childhood** is the period of the child's life that spans ages six to twelve years. It is a developmental stage referred to as the school

years, because almost every culture worldwide considers these children ready and willing to learn

**Later childhood** it is the time period from the age of 11 years or 13 years until the age of 18 years; it is in late childhood that the first signs of puberty usually begin to appear, a lot of growth is experienced by both boys and girls during late childhood.

**Adulthood** is the longest period in life which has been divided into three periods is young (21-35), middle (35-65), and older (65+). The features of this stage are physical, psychological, objectivity, maturity, responsibility, individuality.

**Part II: Factors Influences on growth and development**

- Hereditary factors.
- Genetic potentials.
- Environmental factors.
- Socioeconomic.
- Nutrition.
- Exposure to teratogens.
- Endocrine functioning.
- Infectious diseases and accidents.

**Learning Objectives**

**At the end of this Part, the student should be able to:**

1. Discuss the factors affecting growth and development
    a. Hereditary factors, Genetic potentials, Environmental factors, Socioeconomic, Nutrition.
    b. Exposure to teratogens, Endocrine functioning.
    c. Infectious diseases and accidents.

**Factors influencing growth and development**

**A. Hereditary and Genes**

2. Heredity: Inherited characteristics have a profound influence on development. A height co-relation exists between parent and child with regard to traits such as height, weight, and rate of growth.

2. Genes: Genes are sometimes responsible for certain disease and abnormalities in children. Two common childhood conditions that are caused by genetic defects are Sickle Cell Anemia and Down's Syndrome.

**B. Environmental factors: that's contain of the following:**

**a.** Pre-natal environment

1-Factors related to mothers during pregnancy:

- Nutritional deficiencies

- Diabetic mother

- Exposure to radiation

- Infection with German measles

- Smoking

- Use of drugs

2-Factors related to fetus

- Mal-position in uterus
- Faulty placental implantation

**b.** Post-Natal Environment

1. External environment:

- Socio-economic status of the family

- Child's nutrition

- Climate and season

- Child's ordinal position in the family

- Number of siblings in the family

- Family structure (single parent or extended family … )

2. Internal environment

- Child's intelligence
- Hormonal influences
- Emotions

## Factors influencing the effect of teratogens

a. **Timing**: the effect of a teratogen on the developing organism depends on what period in the pregnancy (in development) the child is exposed to the teratogen.

   Some teratogens cause damage only during specific days or weeks in early pregnancy.

   Other teratogens are harmful at any time during the pregnancy, for example, for behavioral teratogens, there is no safe period, the brain and nervous system can be harmed throughout the pregnancy.

   **Critical period**: in prenatal development, the time when a particular organ or other body part is most susceptible to teratogenic damage.

b. **Exposure**---the effect of a teratogen on the developing organism also depends on the dose and/or frequency of exposure of/to the teratogen

3. Endocrine functioning
4. Pituitary and thyroid glands disorders tend to influence growth and development.
5. Infectious disease and accidents

## Part III: Growth and Development Measurement

- Growth chart (growth monitoring).
- Measurement techniques.
- Denver development screening test (DDST).

- Measurement of height, weight, head circumference, chest circumference, thickness of skin fold, body proportion.

**Learning Objectives**

**At the end of this chapter, the student should be able to:**

1. Analyze the growth chart.
2. Describe the measurement techniques for growth.
3. Compare the different developmental stages on DDST.
4. Explain the process of measurement of high, weight, head circumference, chest circumference, thickness of skin folds, and body proportion.

## Growth and development Measurement

### 1. Growth Chart

The growth chart is a visual display of child's physical growth. Growth charts are used to compare child's height, weight and head circumference against children of same age.

**Types of growth chart**

1. Weight for age (birth to 36 months).
2. Length-for-age (birth to 36 months).
3. Head circumference for age (birth to 36 months).
4. Weight for length (birth to 36 months).
5. Weight for age (2 years to 20 years).

6. Stature for age (2 years to 20 years).
7. Body mass index for age (2 years to 20 years).

**Important or uses of growth chart:**

1. **Growth monitoring:** main use is growth monitoring of child.
2. **Diagnostic tool:** for mortality, morbidity and health status.
3. **Planning & policy making:** by grading malnutrition.
4. **Educational tool:** mother can be educated regarding care of her child.
5. **Tool for action:** it helps the health workers to determine type of intervention needed.
6. **Tool for teaching:** Growth chart also gives information like
   - Birth date & weight.
   - Immunization of child.
   - Immunization of mother.
   - Child health record.

## Growth Charts

The physical growth of children has long been recognized as an important indicator of health and wellness. Growth charts have been used to assess whether a child is receiving adequate nutrition and to screen for potentially inadequate growth that might be indicative of adverse health conditions. Traditionally, attention has focused on under nutrition.

**CDC recommends that health care providers:**

1. Use the WHO growth standards to monitor growth for infants and children ages 0 to 2 years of age in Iraq.
2. Use the CDC growth charts for children age 2 years and older in Iraq.

## 2. Anthropometrics measurement

Are a set of non-invasive, quantitative body measurements used to assess growth, and health parameters, help providers determine if a child is growing properly and can indicate when the child's health and well-being are at risk. Additionally, anthropometric measurements assist providers in selecting appropriate treatment options for children and adolescents.

Anthropometric measurements, including:

1. Weight
2. Length or height (Stature)
3. Head, chest and abdominal circumference
4. Skin, arm and wrist fold thickness
5. Bone age
6. Body Mass Index (BMI)

### A: Weight

- A full term baby on an average **weighs 3.5 kg.**
- Weight loss in first few days: **5%-10%** of birth weight
- Return to birth weight: **10 days** of age
- **Doubled** (twice) by 6 months
- **Tripled** (thrice) by one year.
- **Quadrupled** (4 times) by 2 years.

**Average weights:**

- 3.5 kg at birth
- 10 kg at 1 yr
- 20 kg at 5 yr
- 30 kg at 10 yr

**Daily weight gain: Average annual weight gain:** 2.3 kg between 2 yr and puberty

| Age | Wt. gain |
|---|---|
| First 3 mo | 30 gm/day |
| 3 - 6 mo | 20 gm/day |
| 6 - 9 mo | 15 gm/day |
| 9 – 12 mo | 12 gm/day |

**Formulas for Approximate Average weight:**

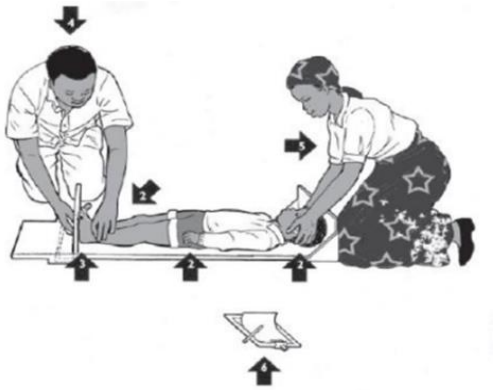
| WEIGHT | KILOGRAMS |
|---|---|
| 3 – 12 mo | age(mo)+9/2 |
| 1 – 6 years | Age(yr)x2+8 |
| 7 – 12 years | Age(yr) x7-5/2 |

**B: Height:**

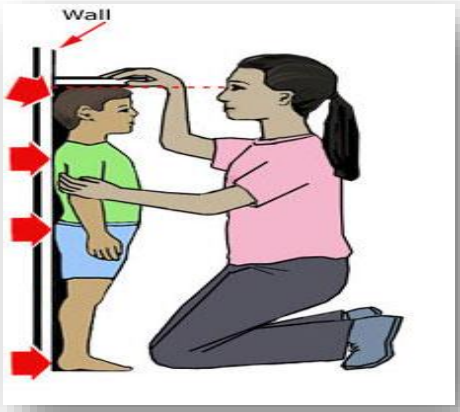
1. The average child length is **50 cm at birth,75 cm at 1 yr** and **87 cm at 2 yr**.
2. At age **4 yr**, the average child is **100 cm** tall (**double birth length**)
3. So, body ht. increases by about 50% at the end of 1st yr than it was at birth, and 100% at 4th yr.

**Average annual height** increase: 5-7 cm between age 4 yr and puberty

For infants, the measure of linear growth is length, taken by two examiners (one to position the child) with the child supine on a measuring board (**infantometer).**



For older children, the measure is stature, taken with a child standing on a **stadiometer** .




The child should stand erect with bare and closed feet , the external auditory meatus at the level of lateral canthus and all aspects of back should be in touch with the wall as much as possible.

| Age | Weight | Height |
|---|---|---|
| Infancy: Birth to 6 months | 140 - 200 g Weekly<br>Birth weight doubles by age 6 months | Monthly gain 1 (2.5 cm) |
| 6 months to 12 months | Weight gain 85-140 g<br>Birth weight triples by age 12 months | Monthly gain 1/2 ( 1.25 cm)<br>Increase 50% over birth length by age 12 months |
| Toddler | Yearly gain 2 to3 kg | Yearly gain 7.5- 10 cm |

| | | |
|---|---|---|
| | Birth weight quadruples by age 2 | |
| Preschool age | Yearly gain 2 -3 kg | Yearly gain 5-7 cm<br>Birth length doubles by age 4 years |
| School age | Yearly gain 2-3 kg | Yearly gain 5 cm |
| Adolescence | **Males:**<br>Highly variable, gain 7 –to 30 kg.<br>Growth spurt begins at average age of 13<br>**Females:**<br>Highly variable, gain 7- t0 25 kg<br>Growth spurt begins at average age of 11 | **Males:**<br>Highly variable, gain 10-t0 30 cm<br>**Females:**<br>Highly variable, gain 5- to 25 cm. |

## C. Head Circumference:

Measured from the supraorbital ridge in front to the farthest point of the occiput in back i.e. Occipito-Frontal Circumference (OFC).

**Average HC:** 35 cm at birth (13.5 inches)

By 1 yr it increases 12 cm to become 47 cm

**OFC increase in the 1st year of life**

| | |
|---|---|
| **Birth** | **35 cm** |
| **0-3 mo** | **↑ 2cm/mo** |
| **3-6 mo** | **↑ 1cm/mo** |
| **6-12 mo** | **↑ ½ cm /mo** |
| **1 yr** | **47 cm** |

| **OFC after the 1st year of life** | |
|---|---|
| **1 year** | **47 cm** |
| **2 years** | **49 cm** |
| **3 years** | **50cm** |
| **6 years** | **52 cm** |
| **10 year** | **53 cm** |
| **adult** | **56 cm** |

## D. Body proportions

At birth the head is one fourth the total body length . In adults it is about one eighth of the total body length.

At birth, normal head circumstances is about 33-35 cm (13-14 inches).

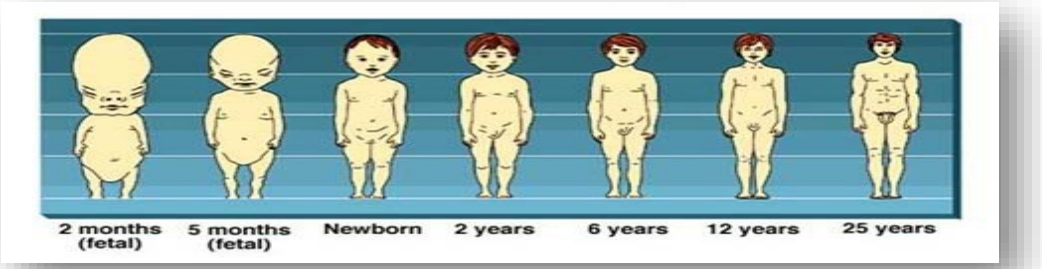
Chest circumference less than head circumferences 1-2 cm .

Head &chest circumstances equalize during the first year after birth.

The arms legs are relatively short and chest and abdomen more barrel shaped. As growth proceeds , the midpoint of the total height moves

from umbilicus to pubic bone , the chest flattens and extremities grow longer.

During puberty , adult proportions are attained and the characteristic male and female contours develop**.**




**E. Body Mass Index:**

The classification of body mass index includes the following:

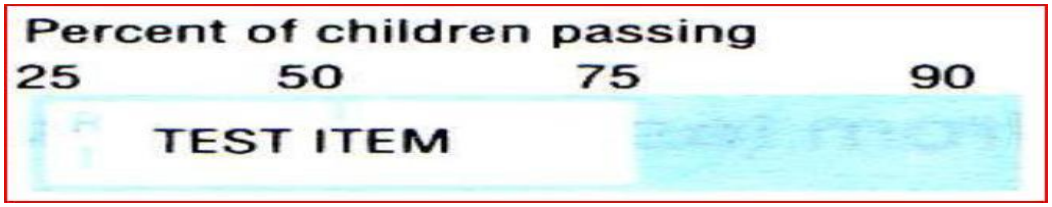
| BMI | Weight status |
|---|---|
| ➢ Below 18.5 | Underweight |
| ➢ 18.5-24.9 | Normal |
| ➢ 25.0-29.9 | Overweight |
| ➢ 30.0-34.9 | Obese (Class I) |
| ➢ 35.0-39.9 | Obese (Class II) |
| ➢ 40.0 and higher | Extreme obesity (Class III) |

**3. Denver Developmental Screening Test I and II (DDST)**

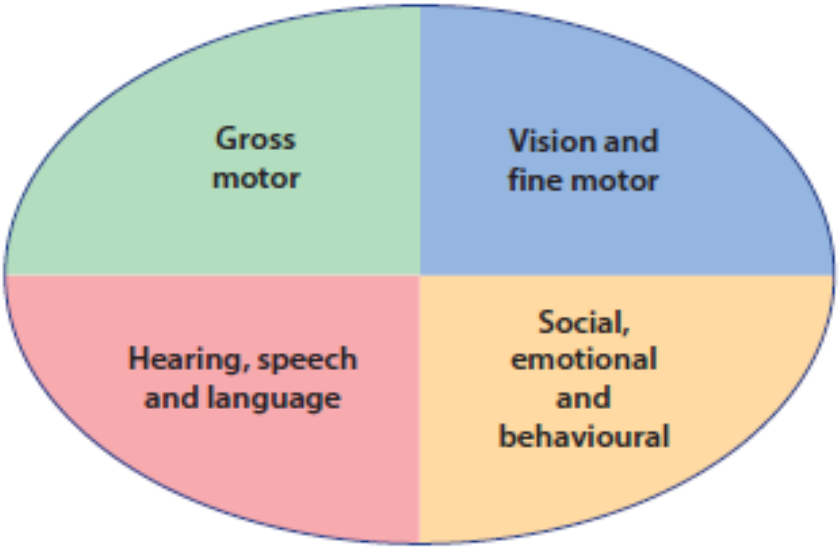
1. The most widely used test for screening developmental problems in children.
2. Administered to children from birth to 6 years.
3. Assesses a child's performance on various age-appropriate tasks
4. Designed to compare a given child's performance with the performance

of other children the same age.

- The total of items or tasks is 125.
- Each item represent in bar each bar divided as the following:




5. DDST II includes four areas or sector:
    1. Personal –Social: 25 items
        - Getting along with people and caring for personal needs.
    2. Fine Motor-adaptive: 29 items
        - Eye hand coordination, manipulation of small objects, and problem solving
    3. Language: 39 items:
        - Hearing, understanding, and using language
    4. Gross Motor: 32 items:
        - Sitting, walking, jumping

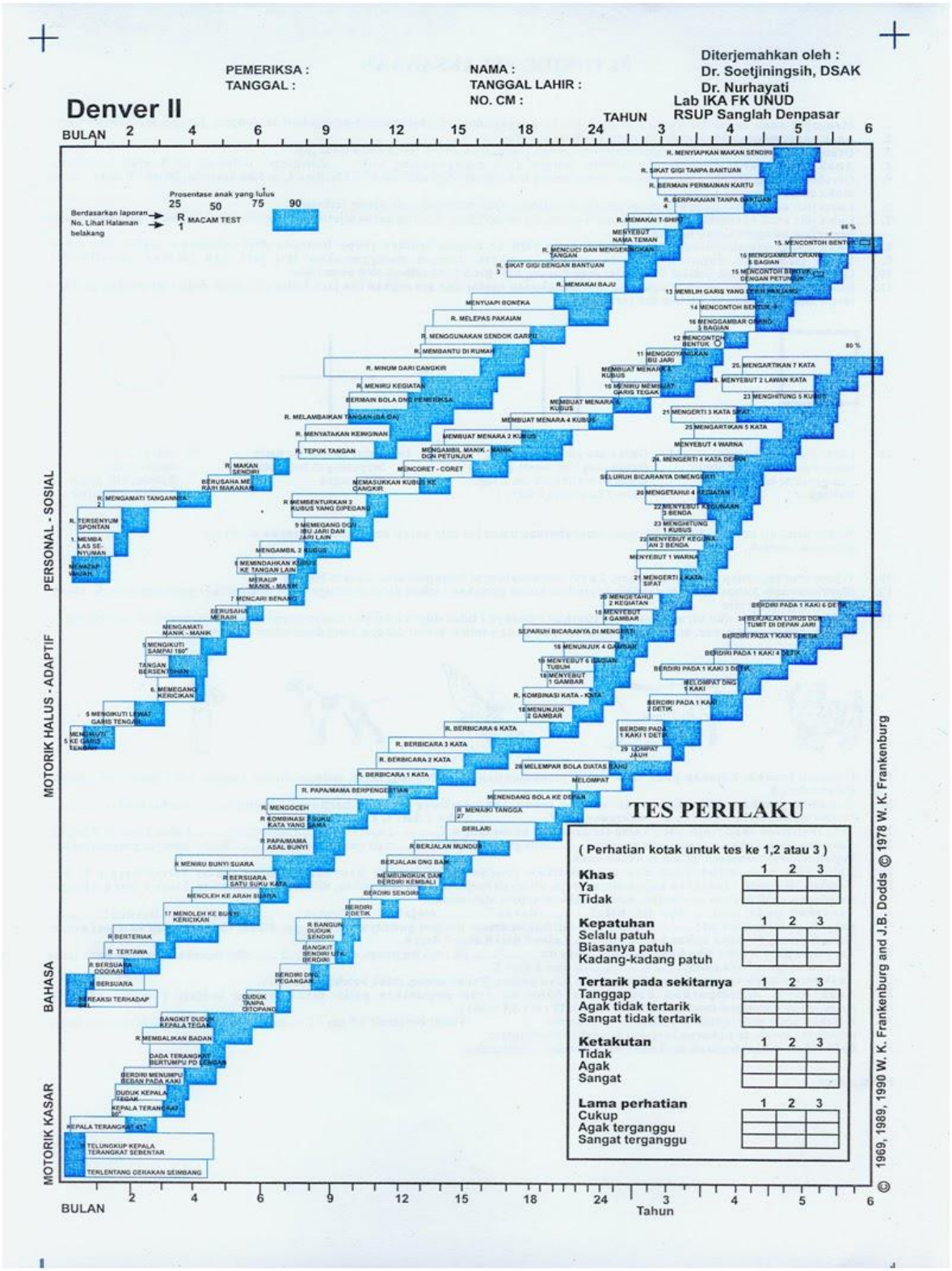


## Considerations for Referral Treatment and / or Follow-Up

A. Infants and Children less than 2 years of age:
   1. Abnormal Head Circumference
   2. Short stature
   3. Underweight
   4. Inadequate weight gain
   5. Overweight

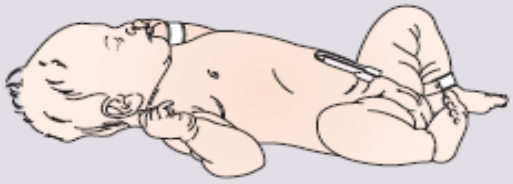
B. Children greater than 2 years of age to Adolescents:
   1. Short Stature
   2. Underweight
   3. Overweight
   4. Obese

## Developmental Milestones:


Denver II
PEMERIKSA :
TANGGAL :
NAMA :
TANGGAL LAHIR :
NO. CM :
Diterjemahkan oleh :
Dr. Soetjiningsih, DSAK
Dr. Nurhayati
Lab IKA FK UNUD
RSUP Sanglah Denpasar
BULAN
TAHUN
Prosentase anak yang lulus
25 50 75 90
Berdasarkan laporan No. Lihat Halaman belakang
R MACAM TEST
PERSONAL - SOSIAL
MOTORIK HALUS - ADAPTIF
BAHASA
MOTORIK KASAR
TES PERILAKU
( Perhatian kotak untuk tes ke 1,2 atau 3 )
Khas
Ya
Tidak
Kepatuhan
Selalu patuh
Biasanya patuh
Kadang-kadang patuh
Tertarik pada sekitarnya
Tanggap
Agak tidak tertarik
Sangat tidak tertarik
Ketakutan
Tidak
Agak
Sangat
Lama perhatian
Cukup
Agak terganggu
Sangat terganggu
1 2 3
© 1969, 1989, 1990 W. K. Frankenburg and J.B. Dodds © 1978 W. K. Frankenburg

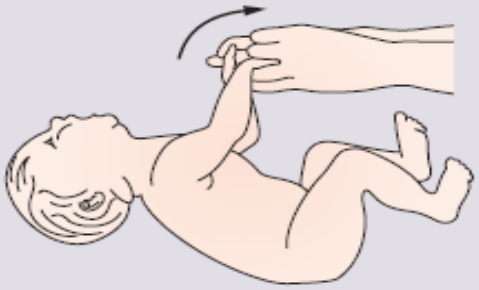
## Gross motor development (median ages)

**newborn**



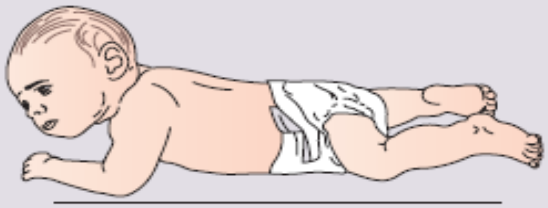
Limbs flexed, symmetrical posture

**newborn**



Marked head lag on pulling up

**6–8 weeks**

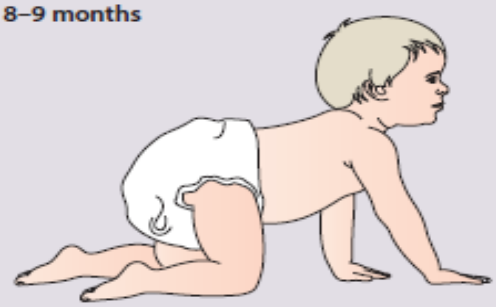


Raises head to 45° in prone

**6–8 months**

Sits without support
– at 6 months: with round back
– at 8 months: with straight back (shown)

**8–9 months**



Crawling

**10 months**

Cruises around furniture

**12 months**

Walks unsteadily,
broad gait, hands apart

**15 months**

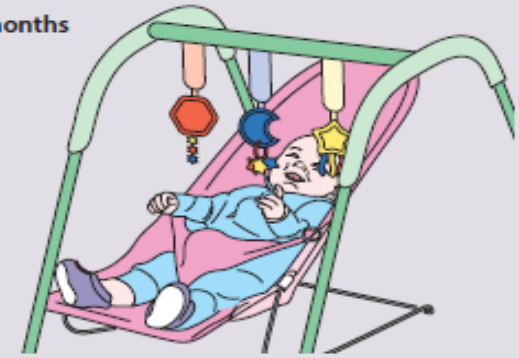
Walks steadily

# Vision and fine motor (median ages)

**6 weeks**

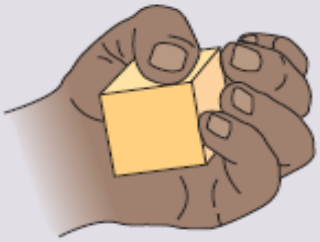
Follows moving object or face by turning the head (illustrated).

**4 months**



Reaches out for toys

**4–6 months**

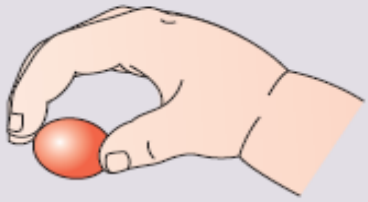


Palmar grasp

**7 months**

Transfers toys from one hand to another

**10 months**

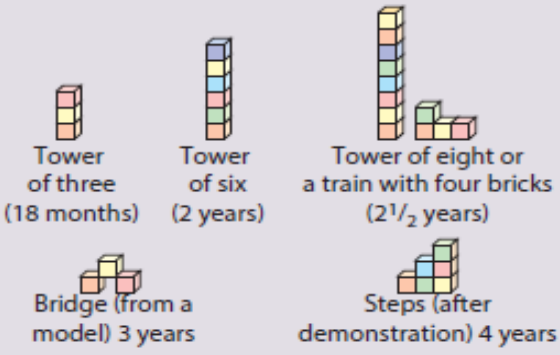


Mature pincer grip

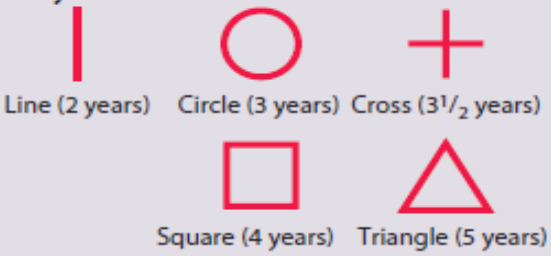
**16–18 months**

Makes marks with a crayon

**14 months–4 years**




**2–5 years**




Ability to draw without seeing how it is done. Can copy (draw after seeing it done) 6 months earlier.

## Hearing, speech and language (median ages)

(a)

**NEWBORN**

Startles to loud noises

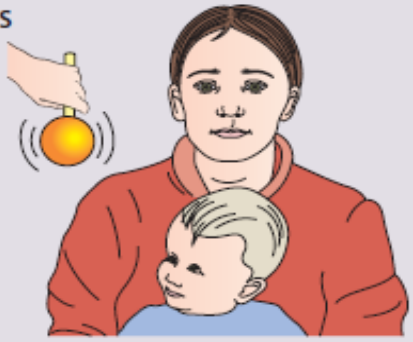
(b)

**3–4 MONTHS**


Vocalises alone or when spoken to, coos and laughs

(c)

**7 MONTHS**



Turns to soft sounds out of sight

(d)

**7–10 MONTHS**


At 7 months, sounds used indiscriminately. At 10 months, sounds used discriminately to parents

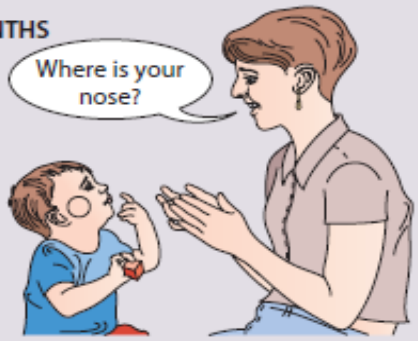
(e)

**12 MONTHS**


Two to three words other than 'dada' or 'mama'

(f)

**18 MONTHS**




6–10 words. Shows two parts of the body

(g)

**20–24 MONTHS**


Uses two or more words to make simple phrases

(h)

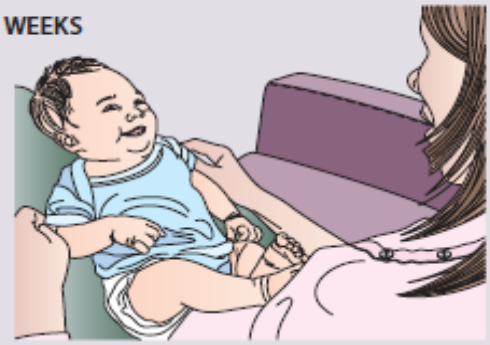
**$2^1/_2$–3 YEARS**


Talks constantly in 3–4 word sentences

## Social, emotional and behavioural development (median ages)

(a)

6 WEEKS



Smiles responsively

(b)

6–8 MONTHS

Puts food in mouth

(c)

10–12 MONTHS

Waves bye-bye, plays peek-a-boo

(d)

12 MONTHS

Drinks from a cup with two hands

(e)

18 MONTHS

Holds spoon and gets food safely to mouth

(f)

18–24 MONTHS

Symbolic play

(g)

2 YEARS

Dry by day. Pulls off some clothing

(h)

2.5–3 YEARS

Parallel play. Interactive play evolving. Takes turn

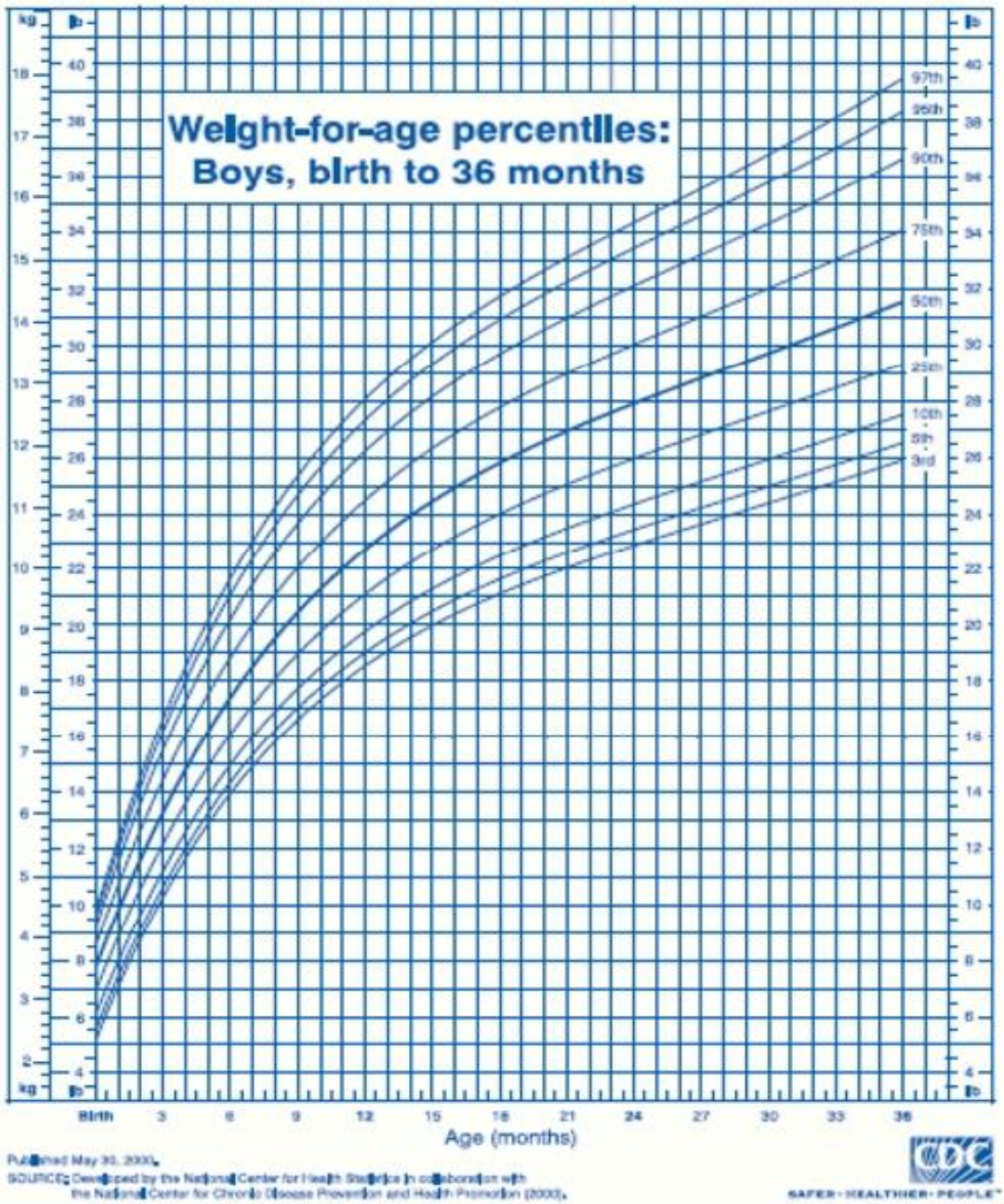



Figure 1. Individual growth chart 3rd, 5th, 10th, 25th, 50th, 75th, 90th, 95th, 97th percentiles, birth to 36 months: Boys weight-for-age

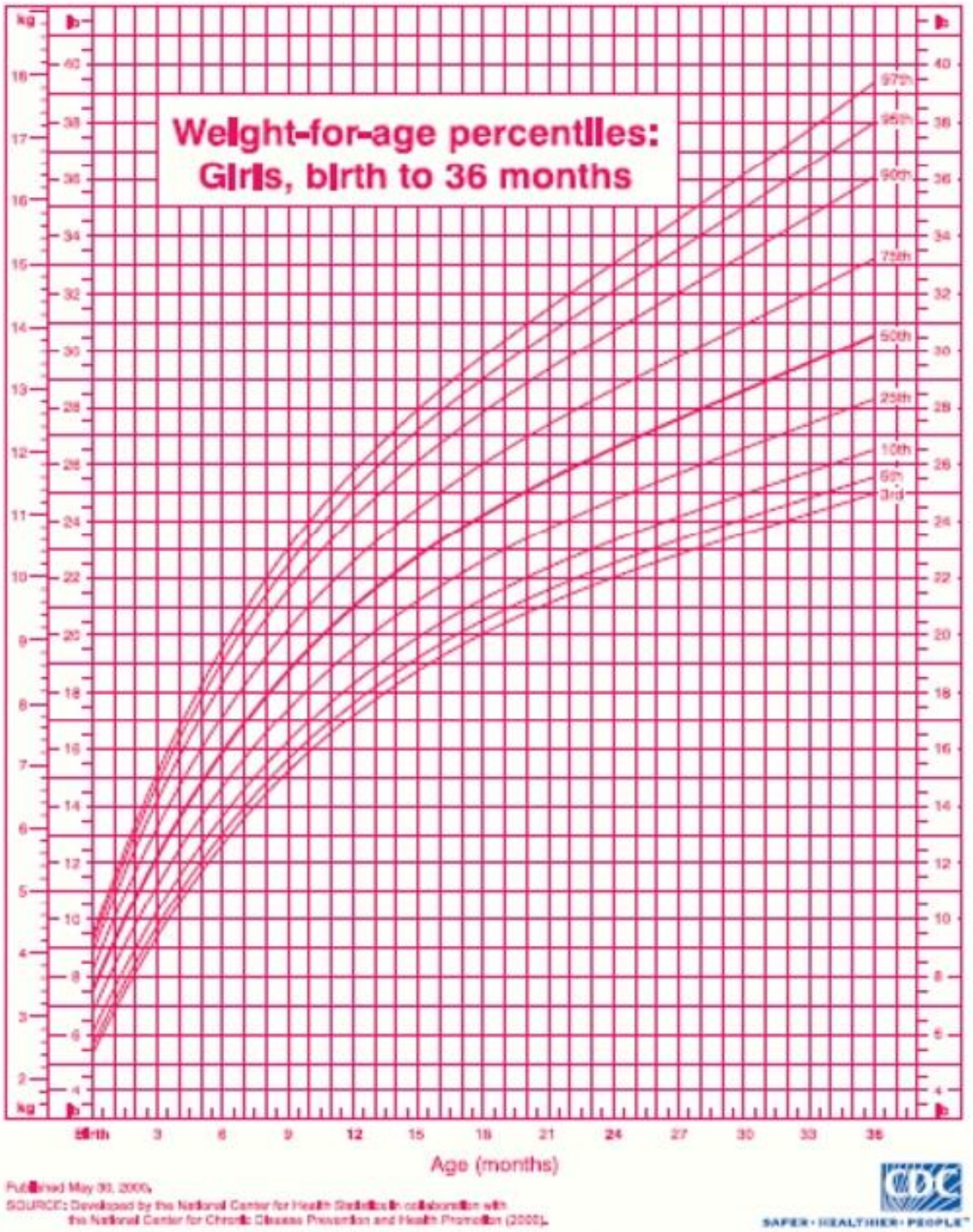



Figure 2. Individual growth chart 3rd, 5th, 10th, 25th, 50th, 75th, 90th, 95th, 97th percentiles, birth to 36 months: Girls weight-for-age

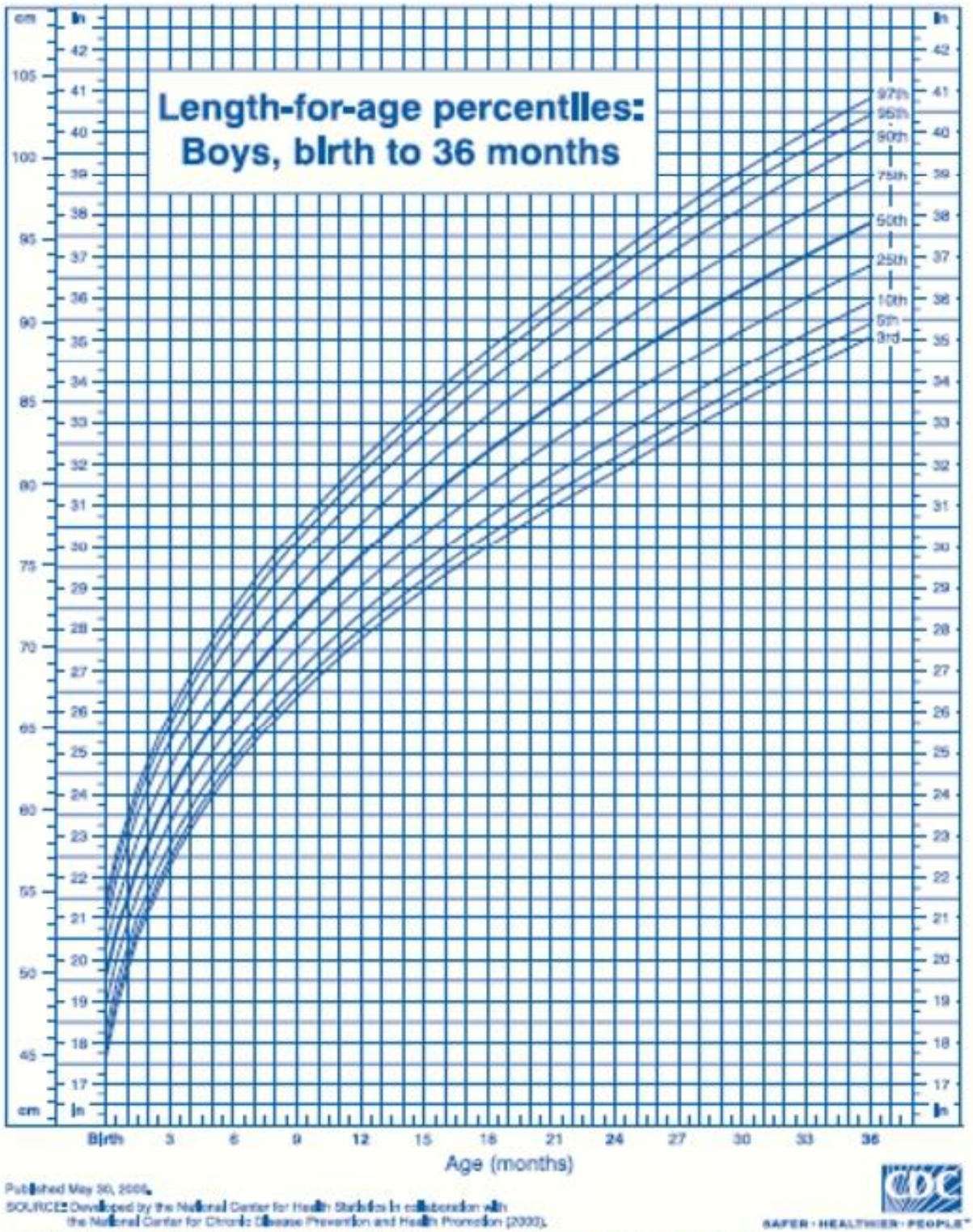



Figure 3. Individual growth chart 3rd, 5th, 10th, 25th, 50th, 75th, 90th, 95th, 97th percentiles, birth to 36 months: Boys length-for-age

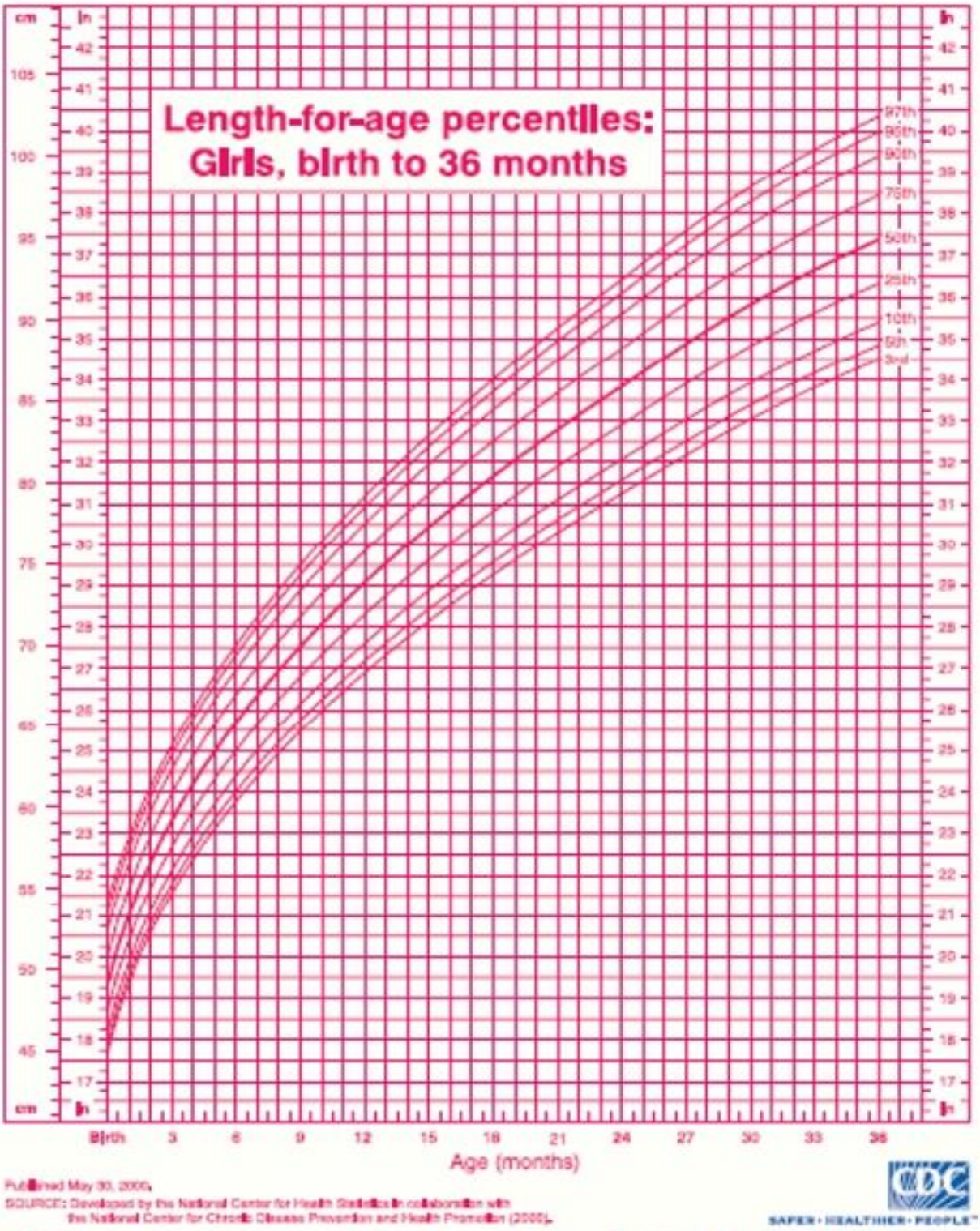



Figure 4. Individual growth chart 3rd, 5th, 10th, 25th, 50th, 75th, 90th, 95th, 97th percentiles, birth to 36 months: Girls length-for-age

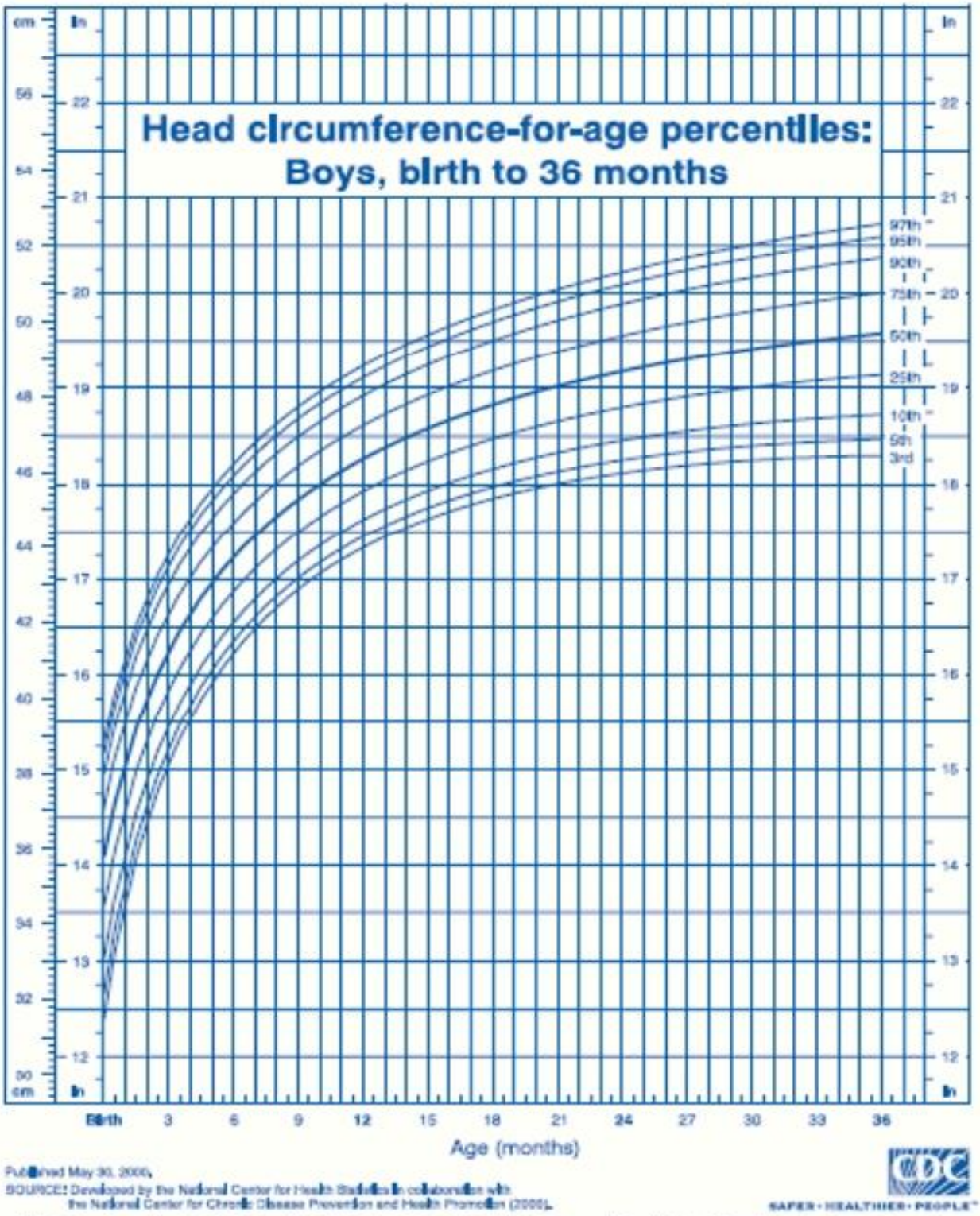



Figure 7. Individual growth chart 3rd, 5th, 10th, 25th, 50th, 75th, 90th, 95th, 97th percentiles, birth to 36 months: Boys head circumference-for-age

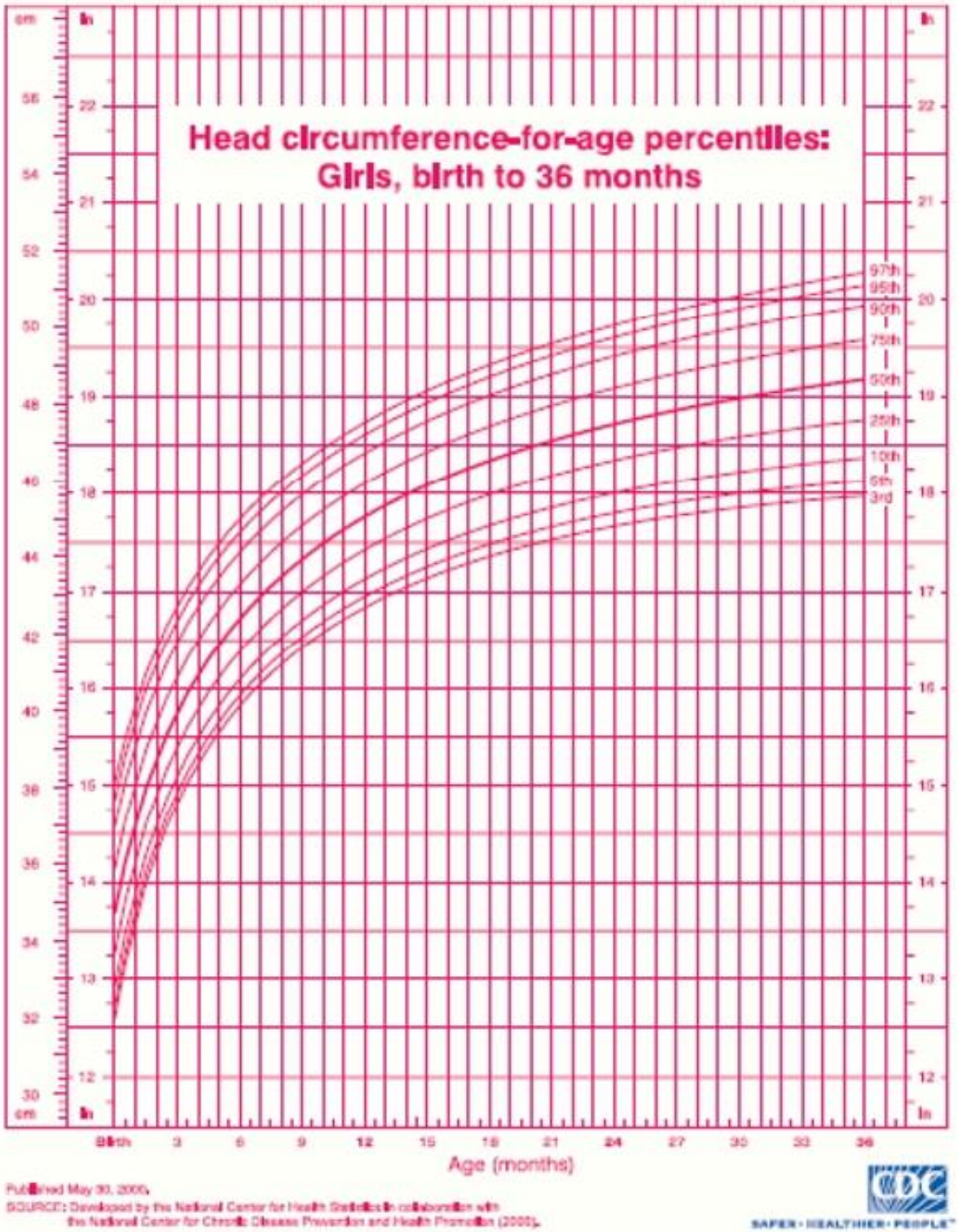



Figure 8. Individual growth chart 3rd, 5th, 10th, 25th, 50th, 75th, 90th, 95th, 97th percentiles, birth to 36 months: Girls head circumference-for-age

## Part IV: Developmental theories

- Theoretic Foundations of personality development.
- Theoretic Foundations of mental development .

## Learning Objectives

**At the end of this unit, the student should be able to:**

1. Identify the Theoretic Foundations of personality development.
2. Describe the stages of psychosexual personality development theory.
3. Compare between the stages of psychosocial developmental theory.
4. Discuss cognitive theory in regard of its stages and characteristics for each stage.
5. Describe the phases of Moral personality development.
6. Identify the phases and stages of Moral personality development.

## Human Growth and Development Theories

**Theory:** Organized and logical set of statements about a subject, that represents the frameworks of clarify for this subject.

**Human Development Theory:** Models that planned to explanation for how and why people become, also tries to explain and predict human behavior.

**The Four Areas of Developmental Theories**

- Biophysical-How we grow, change, age
- Psychosocial-Personality & behavior
- Cognitive-Thinking, intellect
- Moral-Knowing right from wrong, ethics

**The Most Common Developmental Theories**

1. Psychoanalysis Theories
   A. Psychosexual theory: (Sigmund Freud's Theory)
   B. Psychosocial theory: (Erik Erikson's Theory)
2. Cognitive Theory: (Jean Piaget's Theory)
3. Moral theory: (Lawrence Kohlberg Theory)

**1. The Psychoanalysis Theories**

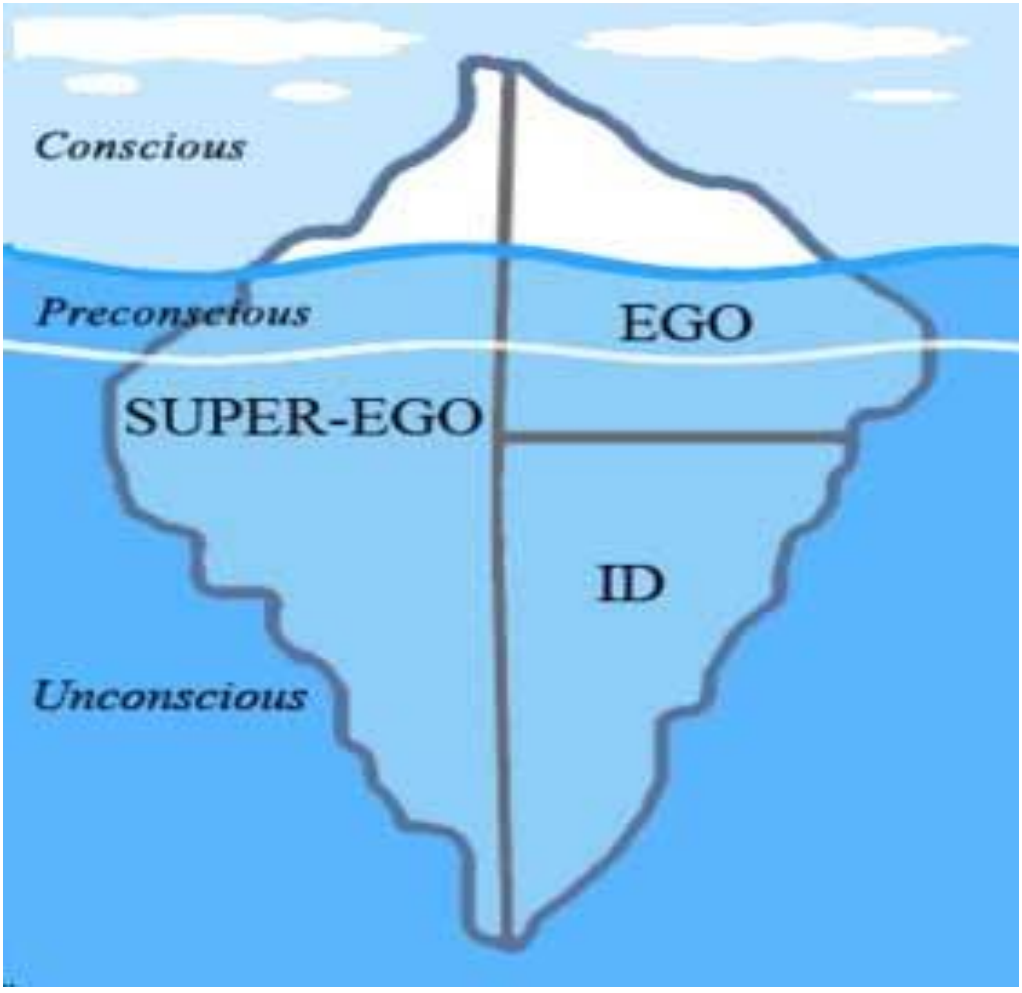
**A. Psychosexual theory: (Sigmund Freud's Theory)**

Freud 's theory of psychosexual development is based on the idea that parents play a crucial role in managing their children's personality, sexual and aggressive drives during the first few years of life to foster their proper development.

Freud's structural model advances that personality consists of three interworking parts: the id, the ego, and the superego.

1. **The id (the instincts):** the largest part of the mind is related to desires and impulses and is the main source of basic biological needs. The Id develops in children from birth.

2. **The ego (the reality):** is related to reasoning and is the conscious, rational part of the personality; it monitors behavior in order to satisfy basic desires without suffering negative consequences. The Ego develops around age 3 years as a child begins to interact more with the world and understand it.
3. **The superego (the morality):** or conscience develops through interactions with others (mainly parents) who want the child to conform to the rules of society. The superego restricts the desires of the id by applying morals and values from society. The Superego develops by age 5 years and is the idealistic part of our personality.



**Id:**
Instincts

**Ego:**
Reality

**Superego:**
Morality

Freud believes that *most human suffering is determined during childhood development*; Freud placed emphasis on the five stages of psychosexual development.

**Stages of Fraud's Psychosexual Theory**

| Stage | Psychosexual Crisis | Age | Characteristics |
|---|---|---|---|
| 1. | Oral Stage | Infancy<br>Birth to 1 y/o | - Center of pleasure: mouth (major source of satisfaction & exploration) |
| 2. | Anal Stage | Toddler<br>1 to 3 y/o | - Source of pleasure: control of anus & bladder (sensory satisfaction & self-control) |
| 3. | Phallic Stage | Preschool<br>3 to 6 y/o | - Center of pleasure: exploration of the child for the genital (masturbation) |

| | | | |
|---|---|---|---|
| 4. | Latency Stage | School<br>6 to 12 y/o | - Energy directed to physical & intellectual activities.<br>- Relationship between peers of same sex |
| 5. | Genital Stage | Adolescent<br>12 to 18-21 | - Energy directed towards full sexual maturity & function & development of skills to cope with the environment |

**B. Psychosocial Theory: (**Erik Erikson Theory**)**

Psychosocial development stages of Erik Erikson theory covered by eight stages from infancy to adulthood. During each stage, the person experiences a psychosocial crisis which could have a positive or negative outcome for personality development. Erikson's ideas were greatly influenced by Freud, going along with Freud's theory regarding the structure of personality. Erikson's emphasized the role of culture and society and the conflicts that can take place within the ego itself, whereas Freud emphasized the conflict between the id and the superego.

## Erickson's Psychosocial Theory

| Age | Stage | Characteristics |
|---|---|---|
| **Infancy** | Trust versus mistrust | - The child learns to trust as needs are met by the mother or caregiver |
| **Toddler** | Autonomy versus shame and doubt | - The child becomes more independent<br>- The child starts to have some control over body functions |
| **Preschool** | Initiative versus guilt | - Development of a conscience<br>- Learning right from wrong |
| **School** | Industry versus inferiority | - Rule-following behavior<br>- Forming social relationships is seen as important |
| **Adolescent** | Identity versus role confusion | - Changes in the body are great<br>- Peers are very important<br>- Working on establishing own identity |

## The positive and negative outcome of Erickson's Psychosocial Theory

| Stage | Name | Age | Psychosocial Crisis | Positive Outcome | Negative Outcome |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| 1 | Infancy | birth to 1y/o | Trust vs. Mistrust | Feelings of Trust | Fear or mistrust |
| 2 | Toddler | 1 to 3 y/o | Autonomy vs. Shame and Doubt | Self Sufficiency | Lack of independence |
| 3 | Preschool | 3 to 6 y/o | Initiative vs. Guilt | Discovers ways to initiate actions | Guilt from actions or thoughts |
| 4 | School Age | 6 to 12 y/o | Industry vs. Inferiority | Development of sense of competence | No sense of mastery |
| 5 | Adolescence | 12 to 18-21 y/o | Identity vs. Role Confusion | Awareness of uniqueness of self | Inability to identify the appropriate roles of life |

**The significant person relationship according to Erickson's psychosocial theory**

| Stage | Age | Significant Person |
|---|---|---|
| Infancy | (birth – 1 year) | Mother and caregivers |
| Toddler | (1 year- 3 year) | Parent (father and Mother) |
| Preschool | (3 years- 6 year) | Family(sibling and parent) and peer |
| School | (6 years- 12 year) | Neighbors and School peer |
| Adolescents | (12 years- 18-21year) | Peers, Role Model |

2. **Cognitive development: (Jean Piaget Theory)**

   Jean Piaget developed his cognitive -developmental theory based on the idea that children actively construct knowledge as they explore and manipulate the world around them. This theory consist of four stages according to age of the child

   **Cognitive abilities**: refers to the mental process that includes: attention, remembering, producing and understanding language, solving problems, and making decisions (thinking, knowing), Children think differently than adults do

**Cognitive development**

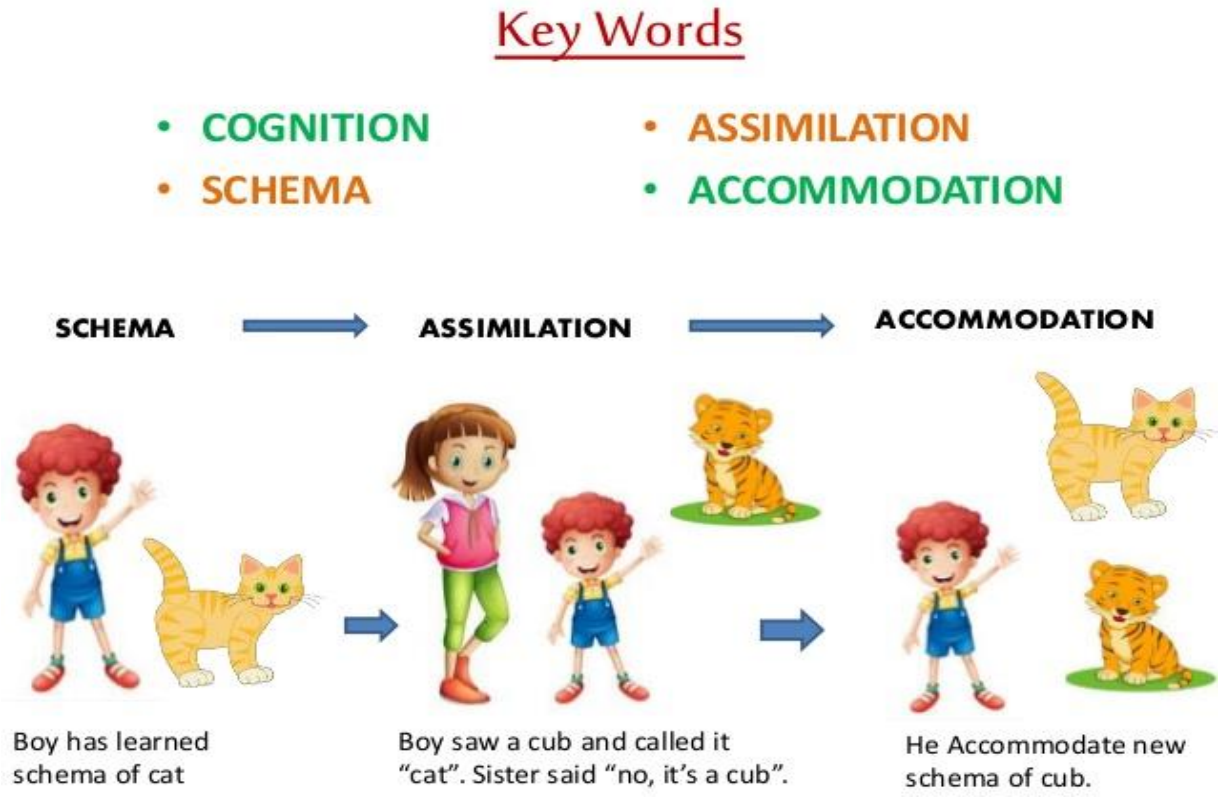

**Theoretical axes**

A. Cognitive function.
B. Stages of cognitive development.
C. Cognitive structure

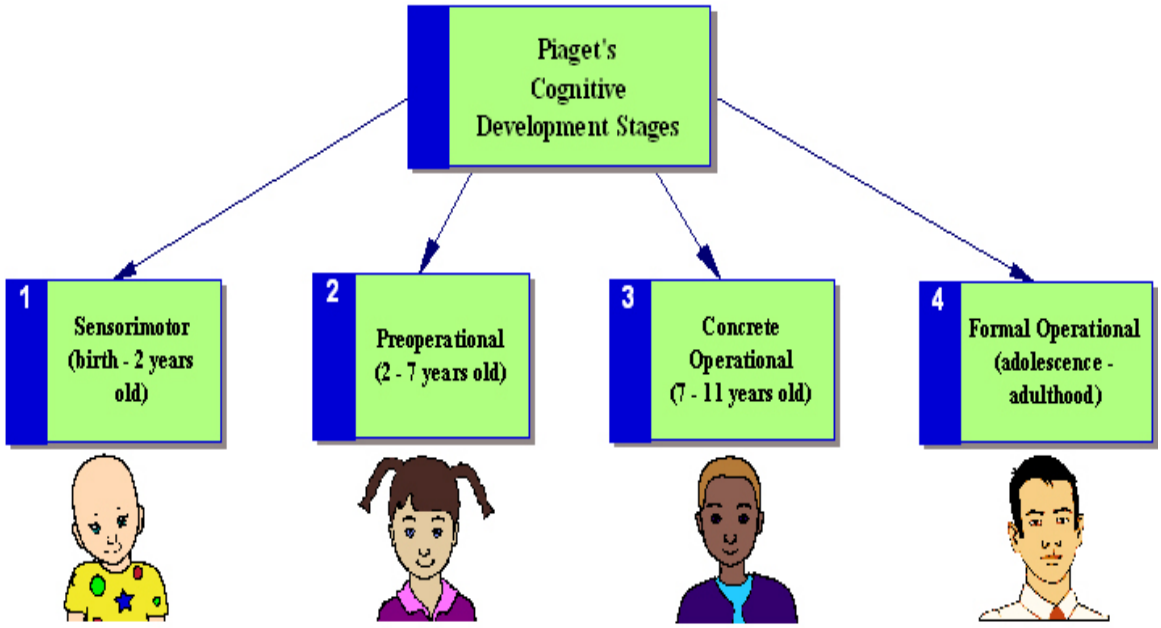
**A- Cognitive function**

1. **Schema**: "how understanding of the world" "picture of the world" or concepts or mental frameworks that people use to organize knowledge and interpret information
2. **Assimilation**: process of taking new information or interpreting a new experience
3. **Accommodation**: process interpreting a new experience by adapting or changing schemas

4. **Equilibrium:** is re-structure of knowledge with new learning or integrate new information with information




## B -Stages of cognitive development




**The Piaget Cognitive Theory**

| | Phases and Stages | Age | Significant Behavior |
|---|---|---|---|
| **Stage 1:** | Sensorimotor phase | Birth to 2 years | - Information is gained directly through:<br>- The senses (see, smell, taste, touch, and hear)<br>- Physical or motor actions (sucking, reaching, grasping) |
| | **Sub-Stage 1:** Use of reflexes | Birth to 1 month | - Building knowledge through reflexes (grasping, sucking). |
| | **Sub-Stage 2**: | I to 4 months | - Reflexes are more organized; |

| | | | |
|---|---|---|---|
| | Primary circular reaction | | discover parts of body with enjoyable activities (mouth to suck) |
| | **Sub-Stage 3**: Secondary circular reaction | 4 to 8 months | - Repetition of actions, explore the environment (shaking a rattle) this activities without meaning or goal. |
| | **Sub-Stage 4** : Coordination of secondary circular reaction | 8 to 12 months | - Linked the events with objects, these activities with meaning or goal. |
| | **Sub-Stage 5** : Tertiary circular reaction | 12 to 18 months | - Exploring (trial and error) with uses the objects |
| | **Sub-Stage 6**: Symbolic Thought | 18 to 24 months | - Imitation and repetition of others' behaviors (use gestures) |
| **Stage 2:** | Preoperational stage | 2 to 7 years | |
| | **Sub-Stage 1:** Pre-conception phase | 2 to 4 years | - Development of symbolic and use of one object to stand for another (stick becomes a horse)<br>- Centration: put one characteristic of object (banana it is yellow color) |

| | | | |
|---|---|---|---|
| | **Sub-Stage 2:** Conception stage | 4 to 7 years | - Egocentric, selfish thinking diminishes. known causes and effect of object<br>- Recognize and describe the objects by shape, size, type and color |
| **Stage 3:** | Concrete operations phase | 7 to 11 years | - Abilities to think logically about concrete objects and situations<br>- Focus more than stimulation of any action (thinking)<br>- Abilities to solve problem and decision making but not right some times |
| **Stage 4:** | Formal operations phase | 11 to 15 years | - Ability to think logically about abstract principles<br>- Thinking about past, present and future<br>- Solve problems and put on it hypothesis |

**C -Cognitive structure**

Children since childhood begins to form a mental map for each situation (schemes) at the beginning are separate and are linked in every learning process during living.

### 3. Moral theory: (Lawrence Kohlberg Theory)

Lawrence Kohlberg's theory focuses on the thinking process that occurs when one decides whether a behavior is right or wrong. Thus, the theoretical emphasis is on how one decides to respond to a moral dilemma, not what one decides or what one actually does.

**Stage of Kohlberg's Moral Theory**

| Level | Age | Stage | Characteristics |
|---|---|---|---|
| **Pre conventional Level** | 2 to 7 years | 1: Obedience and Punishment Orientation | -Adjusts behavior according to good/ bad and right/wrong thinking |
| | | 2: Individualism and Exchange | |
| **Conventional Level** | 7 to 12 years | 3: Good Interpersonal Relationships | -Seeks conformity<br>-Follows rules<br>-Maintains social order |
| | | 4: Maintaining the Social Order | |
| **Post conventional Level** | Age 12 years and older | 5: Social Contract and Individual | - The person understands the principles of human rights and personal conscience. Person |

| | | | |
|---|---|---|---|
| | | Right<br>6: Universal Principles | believes that trust is basis for relationships. |

**Part V: Midterm Examination**

**Part VI: Development implications**

- Genetic codes.
- Fatal growth and development (Development from conception to birth).
- Zygote to new-born.
- The germinal period.
- The period of embryo.
- The period of fetus.

**Learning Objectives**

**At the end of this unit, the student should be able to:**

1. Describe the genetic codes
2. Explain the process of human development from:
    a. Conception to birth.
    b. Zygote to newborn.
    c. The germinal period.
    d. The period of embryo.

e. The period of fetus.

**Development implications**

**Development Implications of Genetics Code and Fetus Growth**

**The Genetics Code**

**The Genetics**: is the study of individual genes and their role in heritance.

**The Genomics**: is the study of all genes and includes interactions among genes as well as interactions between genes and the environment. Genomics plays a role in complex conditions such as heart disease and diabetes

**The Genetics Code is:**

- A series of messages contained in the chromosomes
- This code regulates cell functions by way of directing the synthesis of cell proteins
- The code corresponds to the structure of the DNA
- The code is transmitted to new cells during cell division

1. Chromosomes: "colored bodies" carrying genetic material contained in the nucleus of all cells except red blood cells
2. Gametes: sex cells (egg, sperm) contain only 23 chromosomes
3. Mitosis: process by which DNA duplicates itself e.g., Zygote (fertilized egg) replicates in first 24 hours
4. Meiosis: process by which gametes or sex cells are formed. Cell with 46 chromosomes replicates itself.
5. Genotype: one's genetic inheritance (e.g., BB or Bb or bb for eye color)
   - homozygous: that have two for the same a trait (e.g., BB or bb)

- heterozygous: that have two for the different a trait (e.g., Bb)

**Congenital / Hereditary Diseases**

- Congenital: present at birth that may be result from many factors inside the uterus.
- Hereditary (genetic): result of chromosome abnormality or defective gene

**Causes of malformations**

1. Chromosomal abnormalities
2. Gene abnormalities
3. Intrauterine injury (e.g. drugs, radiation, infection, environmental, etc)
4. Environmental effect on genetically predisposed embryo

**The Fetus Growth and Development**

Fetal development during pregnancy is measured in number of weeks after fertilization. An average human pregnancy lasts for about 280 days or 40 weeks from the date of the last menstrual period (LMP). Traditionally, it has been calculated as 10 lunar months or, in terms of the modern calendar 9 months.

Fertilization of the egg by the sperm, however, usually occurs 14 days after the last period. Thus, the average actual duration of a human pregnancy (gestation period) is 280 days – 14 days = 266 days.

**The Three Stages** of fetal development during pregnancy are the:

1. Germinal (Pre-embryonic) stage: (Conception - 2 weeks) fertilization through the second week

2. Embryonic Stage: end of the second week through the eighth week or (3 – 8 weeks)
3. Fetal Period: (3 months to birth) end of the eighth week until birth that may be divided to early - 3 to 6 months, and later 7-9 months

The Fetal circulation is a significant aspect of fetal development that spans all three stages

**The Stages of Fetal Development**

**1. The Germinal (Pre-embryonic) stage (conception - 2 weeks)**

Step one of conception is when the sperm penetrates the egg to complete the genetic make-up of a human fetus. At this moment (conception), the sex and genetic make-up of the fetus begins. About three days later, the fertilized egg cell divides rapidly and then passes through the Fallopian tube into the uterus, where it attaches to the uterine wall. The attachment site provides nourishment to the rapidly developing fetus and becomes the placenta.

– Once a month and ovum is released
    - Ovum- A female egg

- The Egg moves through the Fallopian Tube to the uterus
    - Uterus-Where the baby develops during pregnancy
- If not fertilized it breakdowns and is flushed away with menstruation

**2. Embryonic Stage (3 – 8 weeks)**

The embryonic stage of development begins at day 15 after conception and continues through 8 week. Basic structures of all major body organs and the main external features are completed during this time period, including internal organs. The three embryonic layers of cells formed are:

1. Ectoderm: forms the central nervous system, special senses, skin, and glands
2. Mesoderm: forms the skeletal, urinary, circulatory, and reproductive organs
3. Endoderm: forms the respiratory system, liver, pancreas, and digestive system

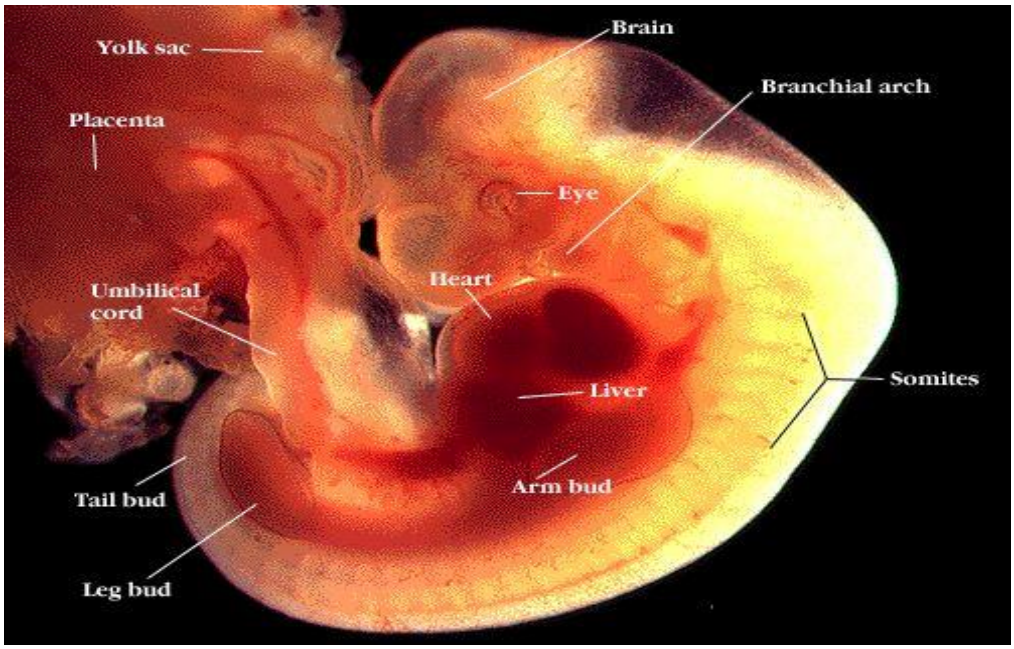
**3. Fetal Stage** (3 to birth)

The average pregnancy lasts 280 days from the first day of the last menstrual period. The fetal stage is the time from the end of the eighth week until birth. It is the longest period of prenatal development. During this stage, the embryo is mature enough to be called a fetus. Although all major systems are present in their basic form, dramatic growth and refinement of all organ systems take place during the fetal period

## The Fetus Growth and Development at Each Month

### The Zygote—Month 1

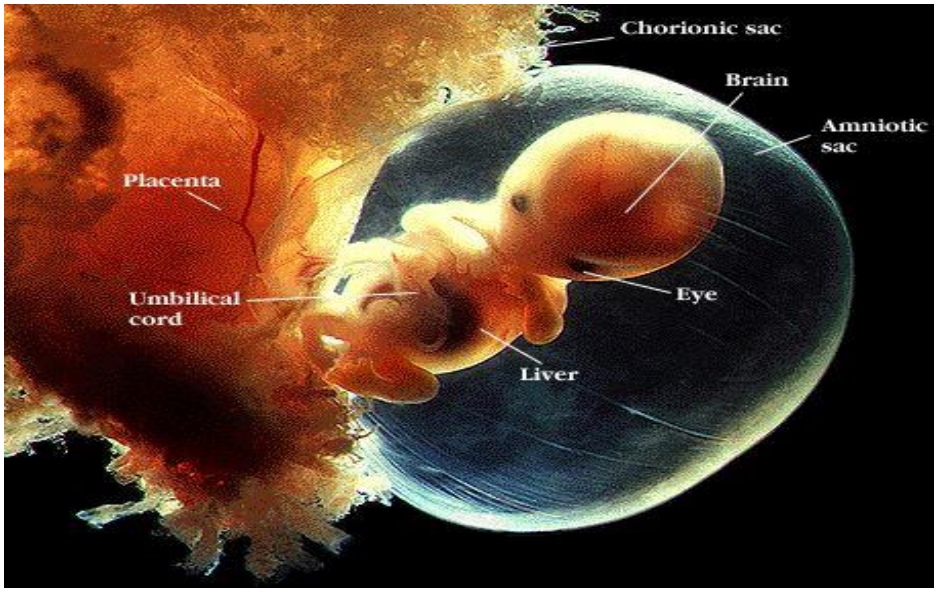
- Fertilized egg reaches the uterus and attaches itself to the uterus.
- Cell multiplication begins
- Internal organs and circulatory system begins to form.
- Cell Division takes place and at the end of two weeks the zygote is the size of a pin-head
- Heart begins to beat
- Small bumps show the beginnings of arms and legs




### The Embryo—Month 2

- At 5 weeks the embryo is 1.27 cm long
- All major organ systems develop

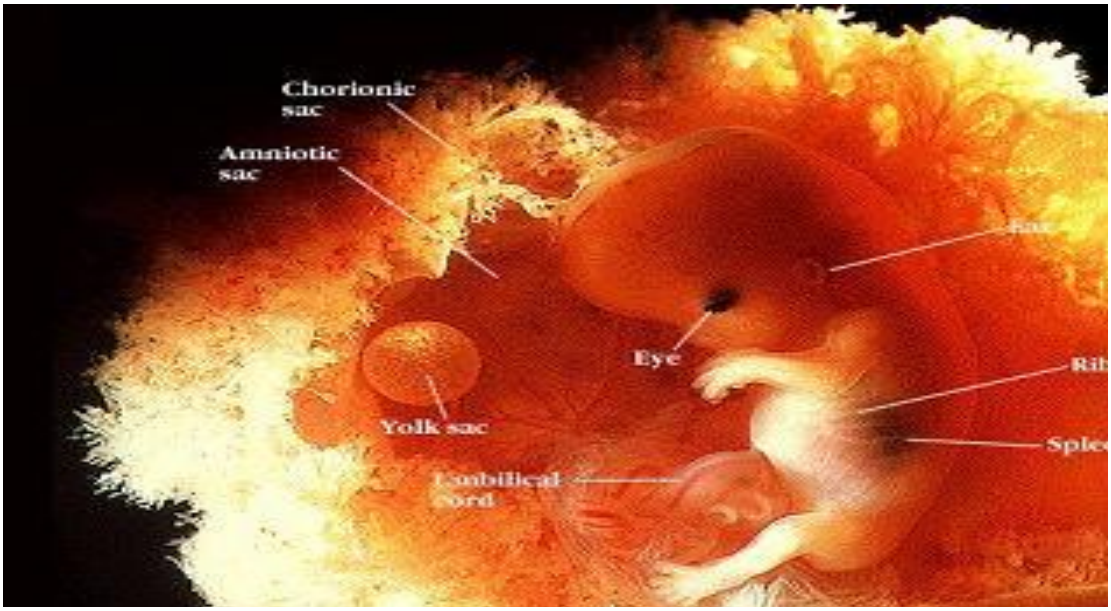
- The placenta and Umbilical Cord develop
    - Placenta- The tissue that connects the sac around the unborn baby to the mother's uterus
    - Umbilical Cord- Tube that connects the baby to the placenta
        - Brings the baby nourishment and oxygen from the mother's blood
        - Takes away waster products
- Amniotic Fluid surrounds the baby
- Face, and limbs take shape



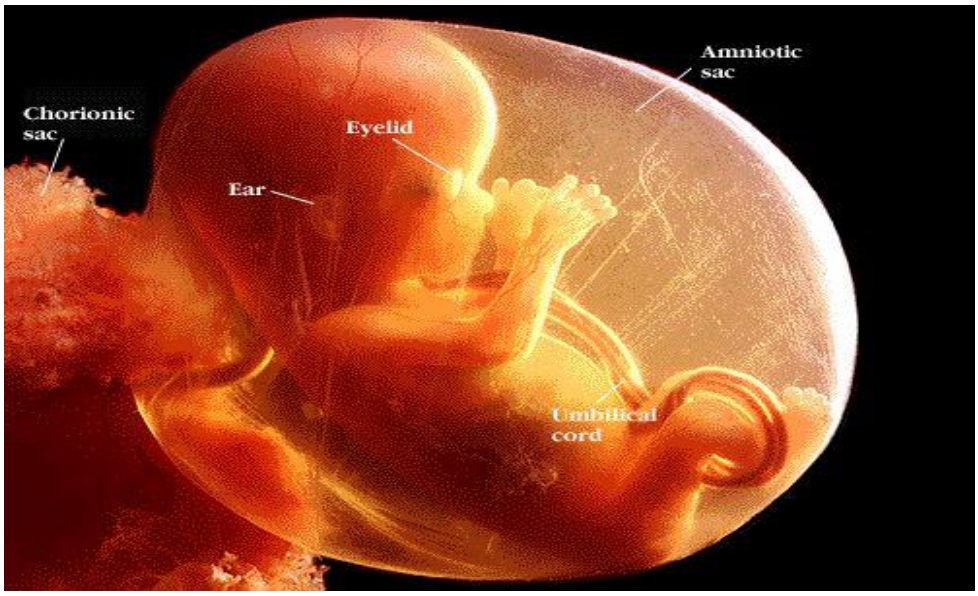

**The Fetus—Month 3**

- The fetus is about 2.54 cm long
- Nostrils, mouth, lips, teeth buds, and eyelids form

- Fingers and toes are almost complete
- Eyelids are fused shut
- Arms, legs, fingers, and toes have developed
- All internal organs are present—but aren't ready to function
- The genital organs can be recognized as male or female




- Fetus is 7.62 cm long and weight is 141.7 gram.
- The baby is covered with a layer of thick, downy hair called **lanugo**.
- The fetus heartbeat can be heard clearly.
- This may be when the fetus's first kick feel.
- The fetus can such thumb and swallow.




**The Fetus—Month 5**

- The Fetus is about 15.24 cm long and weighs 113.4 -141.7 grams.
- A protective coating called **vernix** begins to form on baby's skin.
- Hair eyelashes and eyebrows appear
- Organs keep maturing
- Fetus is very active
- The eyes can open and blink

**The Fetus—Month 6**

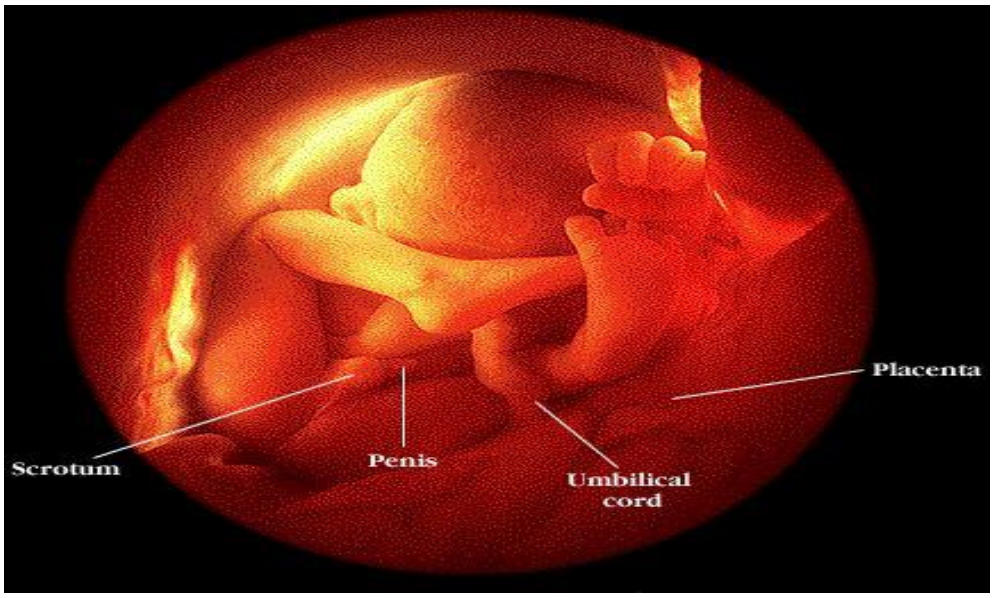
- The fetus is 20.32-25.4 cm long and weighs 113.4 -141.7 grams.
- Baby's lungs are filled with **amniotic fluid**, and he has started breathing motions.
- If **talk** or **sing**, he can hear the sound.
- Fat is starting to deposit under the skin

## The Fetus—Month 7

- Fetus is 25.4-30.5 cm long and weighs about 453.6 - 907 grams.
- Fetus is active and then rests.
- The baby now uses the four senses of vision, hearing, taste and touch

## The Fetus—Month 8

- The fetus is 35.56-40.64 cm long and weighs 907 grams -1.4 Kg
- Layers of fat are piling on.
- Fetus has probably turned head-down in preparation for birth.
- Fetus may react to noises with a jerking action




## The Fetus—Month 9

- Fetus is about 43.2 - 45.7 cm long and weighs 2.3 - 2.7 Kg
- Skin is smooth because of the fat
- Baby's movement slows down due to lack of room

- "Lightening" occurs when the baby drops in the pelvis
- Disease fighting antibodies are taken from the mother's blood

**The critical periods in prenatal development**

| Body System | Especially Sensitive | Development up to … |
|---|---|---|
| Central nervous system/Brain | $4^{th}$ to $8^{th}$ weeks | Postnatal, through to adulthood |
| Heart | $5^{th}$ to $9^{th}$ weeks | $12^{th}$ week |
| Upper limbs | $6^{th}$ to $10^{th}$ weeks | $12^{th}$ week |
| Eyes | $6^{th}$ to 10 weeks | Term |
| Lower limbs | $6^{th}$ to $10^{th}$ weeks | $12^{th}$ week |
| Teeth | $9^{th}$ to $11^{th}$ weeks | Term |
| Palate | $9^{th}$ to $11^{th}$ weeks | $16^{th}$ week |
| External genitalia | $9^{th}$ to $11^{th}$ weeks | Term |
| Ears | $6^{th}$ to $11^{th}$ weeks | $13^{th}$ week |

## Genetic Evaluation and Counseling

Genetic counseling is an evaluation of an individual to confirm, diagnose or rule out a genetic condition.

Ideal time: before conception “preconception counseling provides the opportunity to identify, reduce, and plan for potential risks.

## Nurse’s Role

1. Discussing costs, benefits, and risks of using health insurance, and potential risks of discrimination
2. Recognizing ethical, legal, and social issues
3. Safeguarding privacy and confidentiality
4. Monitoring emotional reactions after receiving information
5. Providing emotional and psychological support
6. Referring to appropriate support groups
7. Beginning the preconception counseling process and referring for further genetic information
8. Taking a family history and scheduling genetic testing
9. Explaining the purposes, risks/benefits of all screening Laboratory and diagnostic tests
10. Answering questions and addressing concerns

## Part VII: Infancy period

- Physical characteristics of new-born baby.
- Birth problems and later handicapped.
- Sensory development.
- Central nervous system.
- The infant (infancy period).
- Physical characteristics.
- Cognitive development.
- Psychosocial development.

## Learning Objectives

**At the end of this part, the student should be able to:**

1. Define concept
2. Describe the characteristics for the following types of development for newborns and infants.
   - Physical characteristics of new-born baby.
   - Birth problems and later handicapped.
   - Sensory development.
   - Central nervous system.
3. Discuss the Birth Problems and later handicapped
4. Identify the Infants developmental Needs.
5. List the Infants developmental problems.

## Newborns and Infants Stages

### Newborns (Neonates) stage

The Healthy Newborn Infant born at term between **(38 to 42 weeks),** cries immediately after birth, establishes independent rhythmic respiration, quickly adapts with the extra-uterine environment, having an average birth weight and no congenital anomalies.

Neonatal period: is period from birth to 28 days of life.

- The 1st week: early neonatal period.
- The next 3 weeks: late neonatal period

### Physical Measurement of healthy neonates

- Weight: Normal Birth weight 2.5 to 4 kg .
- Length: Average: 50 cm Range: 48–52 cm , Growth: 2.5 cm/month for first 6 months
- Head circumference: Range: 32–37 cm .
  Approximately 2 cm larger than chest circumference
- Chest circumference: Range: 30–35 cm

## Physiological Characteristics of Healthy Neonate

### 1. Vital signs:

**TABLE 10.2** Expected Vital Signs of the Term Newborn

| Vital Sign | Expected Range | Characteristics |
|---|---|---|
| Heart rate | 110–160 beats per minute (bpm); during sleep as low as 100 bpm and as high as 180 bpm when crying | Rhythm regular; murmurs may be normal, but all murmurs require medical evaluation |
| Respiratory rate | 30–60 breaths per minute | Episodic breathing is normal; chest and abdomen should move synchronously |
| Axillary temperature | 97.7°F–98.6°F (36.5°C–37°C) | Temperature stabilizes within 8–10 hours after delivery |
| Blood pressure | 60–80/40–45 mm Hg | Not normally recorded for the normal newborn |

2. Neonates spend about 80% of time in sleeping.
3. The neonate loses about 10% of body weight during first week of life.
4. The baby regains the birth weight by 10$^{th}$ day
5. Blood:
   - The neonate has blood volume about 80 ml/kg of body weight.
   - ESR is markedly elevated and poor clotting power are seen due to deficient Vit. K.
6. Posture: The neonate lies in a posture of partial flexion attitude as in uterus
7. Skin: Common Skin Manifestations of the Normal Newborn

Acrocyanosis

A bluish color to the hands and feet of the newborn is normal in the first 6 to 12 hours after birth. Acrocyanosis results from slow circulation in the extremities.

Milia

Small white spots on the newborn's face, nose, and chin that resemble pimples are an expected observation. Do not attempt to pick or squeeze them. They will subside spontaneously in a few days.

Erythema toxicum

The so-called newborn rash commonly appears on the chest, abdomen, back, and buttocks of the newborn. It is harmless and will disappear.

Mongolian spot

These bluish-black areas of discoloration are commonly seen on the back, buttocks, or extremities of African-American, Hispanic, Mediterranean, or other dark-skinned newborns. These spots should not be mistaken for bruises or mistreatment and gradually fade during the first year or two of life.

Telangiectatic nevi

These pale pink or red marks ("stork bites") are sometimes found on the nape of the neck, eyelids, or nose of fair-skinned newborns. Stork bites blanch when pressed and generally fade as the child grows.

Head

- Molding means the head becomes misshapen by the pressure in the birth canal
- It's disappears a few hours after birth.

Fontanels

- The anterior fontanel is diamond-shaped. It normally closes at 9 to 18 months of age.
- The posterior fontanel is small, triangular shaped. It normally closes at 3 months of age.

**Assessment of newborn**

Initial assessment:

The Apgar score is based on observation of: Heart rate, Respiratory effort, Muscle tone, Reflex irritability, Skin color.
(**A**ppearance, **P**ulse, **G**rimace, **A**ctivity, **R**espiration)

The APGAR scoring chart is used to evaluate the conditions of the baby at birth, determine the need for resuscitation, evaluate the effectiveness of

resuscitative efforts, and to identify neonates at risk for morbidity and mortality.

- Each item is given a score of 0, 1, or 2.
- Evaluations of all five categories are made 1 and 5 minutes after birth and are repeated every 5 minutes until the infant's condition stabilizes.

| Signs | 0 | 1 | 2 |
|---|---|---|---|
| **Heart rate** | None | Less than 100 | More than 100 |
| **Respiratory rate** | Absent | Slow, irregular | Good crying |
| **Muscle tone** | Flaccid, floppy | Some flexion | Active flexion |
| **Reflex** | No response | Some motion | Crying |
| **Skin Color** | Blue, pale | Pink body, blue extremities | Completely pink |

**Apgar scores range from 0-10**

- A score of 10 means best possible condition.
- A score of 7-9 means good condition.
- A score of 4-6 means fair condition.
- A score of 0-3 means poor condition.

- **Cognitive development:** Cognition is the ability to think, learn, and remember. Newborn's brain is developing rapidly.

**- Emotional and social development:**

- Newborns quickly learn to communicate.

- They seek interaction with mother or caregiver and express how they feel with sounds and facial expressions.

**-Language development:** Newborn is listening to and absorbing the basic and different sounds of language. This process forms the foundation for speech.

**-Sensory and motor skills development:** Newborns have all five senses.

- Newborns quickly learn to recognize mother or caregiver face.
- The sound of mother or caregiver voice.
- Newborns able to recognize mother or caregiver smell.
- The newborn's sense of touch is especially developed, particularly around the mouth.

**Motor skills develop:** as baby's muscles and nerves work together. Movements are mostly controlled by reflexes.

**Automatic reflexes of newborns**

1. **Blink reflex:** a blink reflex in a newborn to protect the eye from any object (eyelid closure).

2. **Rooting reflex:** when touch near corner of mouth the child will turn the head in that direction. This reflex disappears at about sixth weeks of life.

3. **Sucking reflex**: when newborn's lips are touched the baby makes a sucking motion. This reflex diminishes at about 6 months of age.

4. **Swallowing reflex:** food that reaches the posterior portion of the tongue is automatically swallowed. Gag, cough, and sneeze reflex also are present to maintain a clear airway.

5. **Palmar grasp reflex:** newborns will grasp an object placed in their palm by closing their fingers on it. Disappears at about 6 weeks to 3 months.

6. **Step (walk) in place reflex:** newborn who are held in vertical position with their feet touching at hard surface will take a few quick, alternating steps. Disappears by 3 months of age.


**7. Plantar grasp reflex:** when object touches the sole of a newborn's foot at the base of the toes, toes grasp in same manner as the fingers do. Disappears 8-9 months

**8. Tonic neck reflex**: when newborns lie on their backs, their heads usually turn to one side or the other. The arm and the leg on the side to which the head turns extend and the opposite arm and leg contract.


**9. Moro reflex**: hold newborns in a supine position and allow their heads to drop backward an inch or so they abduct and extend their arms and legs. Strong the first 8 weeks of life and fades by end 4-5 month.

**10.Babinski reflex:** when the side of the sole of the foot is stroked in aninverted "j" curve from the heel upward, the newborn fans the toes.


**D.Movement**

- **Gross Motor (Body Control and Skills):**

a. Be able to turn his head from side to side when lying on his back.

b. Be able to lift his head for a brief second but he is unable to hold his head up by himself.

- **Fine Motor (Hand and Finger Skills):**

c. Newborn can bring his hands toward his mouth and suck on his fingers.

**E. Daily Living Activities:**

- Newborn sleeps about 16 to 20 hours a day.
- Newborn will awaken about every 4 hours to eat.
- Newborn baby needs to eat every 3 hours if the baby on breastfeeding.
- Newborn is probably getting enough to fluid if he is having 6 to 8 wet diapers a day.

**Infancy Stage (The First Year of Life)**

During this very important first year babies grow dramatically, not only physically in weight and height, but developmentally.

**A. From Birth to Six Months**

1. **Physical Growth**
   - Weekly140-200 gm.
   - Birth weight doubles by age 6 months
   - Height :Monthly gain 1inch (2.5 cm)
2. **Social Skills:**
   - Be starting to smile.
   - Imitate facial expressions. - Mimic sounds
3. **Emotional Development:**
   - Be able to express various emotions e.g. anger, sadness, happiness.
   - Be developing a sense of love and trust with caregiver
4. **Fine Motor Skills:**
   - Put toys in their mouth.
   - Reach for objects.
   - Throw toys
5. **Gross Motor Skills:**
   - Lift head.
   - Roll over.
   - Sit with support.
   - Begin to crawl
6. **Sensory Skills:**
   - Like to examine and feel different toys.
   - Love to hear music, listen to voices and different sounds.
   - Like to look at faces, pictures and bright color.

## B. From 6 months to 12 months

### 1. Physical Growth

- Weight gain 85-140 gm.
- Birth weight triples by age 12 months.
- Height Monthly gain 1/2 inch (1.25 cm).
- Increase 50% over birth length by age 12 months.

### 2. Social Skills:

- Be learning to finger feed.
- Drink from a cup.
- Say "mama" "dada".
- Understand simple commands.

### 3. Emotional Development:

- Be very curious about their environment.
- Start to have mood swings and temper tantrums.
- Show separation anxiety when caregiver leaves.

### 4. Fine Motor Skills:

- Grasp objects with thumb and fore finger.
- Hold two objects at the same time.
- Drop and pick up objects.
- Can push pull and throw objects

### 5. Gross Motor Skills:

- Sit unassisted.
- Pull to standing position.
- Crawls well

| Common Infants Needs | Infants developmental Problems |
|---|---|
| 1. Feeding | Suffocation |
| 2. Sucking | Drowning |
| 3. Warmth | Aspiration |
| 4. Comfort | Burns |
| 5. Love and Security | Nutritional Disturbance |
| 6. Exercise | Poising |
| 7. Nourishment | Accidents |
| 8. Fresh Air and Sun Light | Strangle Themselves |
| 9. Sensory Stimulation | Colic Pain |
| 10. Immunization | Skin Disorder |

## Part VIII: Early childhood Period

1. Toddler and preschool Development
2. Biophysical development.
3. Psychosocial development.
4. Moral development.
5. Cognitive and Language development.
6. Identify the toddlers and pre-schoolers developmental needs.
7. List the developmental problems for toddlers and pre-schoolers.
8. Immunization

**Learning Objectives**

**At the end of this unit, the student should be able to:**

1. Define Concepts

2. Discuss the characteristics of:

   - Biophysical development.
   - Psychosocial development.
   - Moral development.
   - Cognitive and Language development.
   - Social and emotional development for toddlers and preschoolers.

3. Compare between the types of Immunization.

4. Describe the developmental needs for toddlers and preschoolers.

5. Identify the common developmental problems for toddlers and preschoolers.

## A. Toddler Stage

Toddlers are children who are 1 to 3 years of age. This time period is a stage of growth for young child.

**The Growth:-**

1. **Physical changes**

- Weight: Yearly gain 2 to3 kg
- Birth weight quadruples by age 2
- Height may increase to about 22 inches. Yearly gain 7.5- 10 cm

**2. Maturation of Systems:**

- Most physiologic systems relatively mature by the end of toddlerhood
- Control of body functions.
    - Defecation (bowel control at 18 months of age)
    - Urination (bladder control day time at 2 years, night time at 3-4 years)

**The Development:-**

**1. Psychoanalysis**

A. Psychosocial

Erikson—(autonomy vs. shame and doubt), toddlers in this stage seek to attain autonomy by gaining more control over self, in such areas as toileting and food and toy preferences. Success leads to self-confidence and self-control, whereas feelings of shame and doubt in these areas may lead to a sense of inadequacy.

B. Psychosexual

Freud— (anal stage) In Freud's psychosexual theory, toddlers is in the anal stage, which focuses on pleasure derived from the toddler's enjoyment of holding and releasing bowel movements.

## 2. Cognitive development

Piaget— (preoperational Stage):- In Piaget's cognitive developmental theory, 2- to 7-year-olds is in the preoperational stage, which is characterized by magical thinking and egocentrism, the inability to see things from another's perspective

## 3. Development of Motor / Sensory Adaptation

- Responds better to visual rather than spoken cues
- Feeds self.
- Loves to experiment and discover
- Goal directed behavior.
- Walks alone
- Begins to run
- Stands on tiptoes
- Climbs on equipment
- Pulls or carries toys while walking

## 4. Development of Language and Communication

Child becomes interested in his environment. His language skills improve as he tries to let others know his thoughts.

### A. Speech:

- Recognizes the names of well-known people and things

- Learns own name
- Repeats words that are overheard
- Is able to say 10 words (young toddler) to 250 words (older toddler)
- Later is able to speak in two- to four-word sentences

**B. Understanding words:**

- Child may be able to point to a body part when named or point to pictures in books.
- Child may be able to name familiar pictures.
- Child may also be able to follow simple directions and requests.

**5. Development of Emotional and social changes**

- Imitates others
- Gains awareness of self as separate from others
- Begins to enjoy spending time with other children
- Engages in parallel play, playing near other toddlers but not consistently interacting or playing together
- Shows affection openly

**6. Development of Behavior:**

- Child wants to be in control and may maintain on doing things himself.
- Child may often say "no'" when he is asked a question.
- Child mood may easily change and lead to temper tantrums.

## 7. Development of Body Image

- Refer to body parts by name
- Avoid negative labels about physical appearance
- Recognize sexual differences by age 2 years

## 8. Development of Sexuality

- Exploration of genitalia is common
- Gender roles understood by toddler
- Playing “house”

## Toddler Needs

1. Love
2. Security
3. Language learning.
4. Independence.
5. Feeding
6. Control of body functions.

## Toddler development Problems

1. Separation Anxiety
2. Regression.
3. Temper tantrum.
4. Negativism.

5. Sibling jealousy
6. Accidents.

**Toddlers Nutrition**

1. Most toddlers prefer to feed themselves
2. A toddler generally does better eating several meals.
3. Feeding suggestions for toddlers include:

- Provide the basic four food groups in small portions four times/ day.
- Offer only a limited number of foods at any one time.
- Limit concentrated sweets and empty calories.
- Avoid to using food as a reward or Punishment

## B. The Preschoolers Stage

Preschoolers are children who are 3 to 6 years of age. This time period is a stage of preschoolers that will go through many changes in his physical, mental, emotional and social development.

**The Child Growth**

1. **Physical growth**
   - Weight: Yearly gain 2 -3 kg
   - Height: Yearly gain 5-7 cm
   - Birth length doubles by age 4 years
   - Has all 20 primary teeth by age 3

- Sleeps 11 to 13 hours at night, most often without a daytime nap

**2. Physiological growth**

- Heart rate: 80 to 120 beats per minute
- Respiratory rate: 20 to 28 breaths per minutes
- Blood pressure: systolic 89 to 112, diastolic 46 to 72

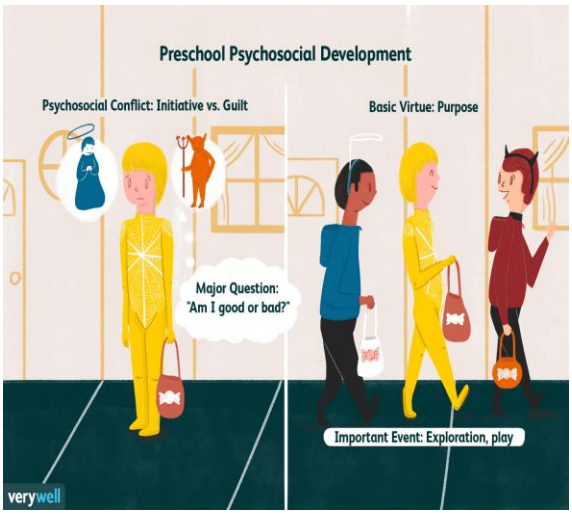
**<u>The Child Development:-</u>**

**C. Psychoanalysis**

**A. <u>Psychosocial</u>**

Erikson— (initiative vs. guilt)

Success in this stage involves initiative, wherein preschoolers begin to emphasize on power and control over their environment; the opposite result is feelings of guilt and a dependence on others.

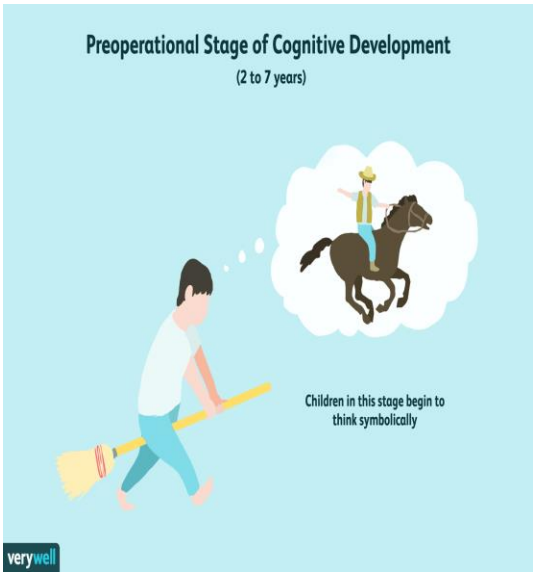



**B. <u>Psychosexual</u>**

Freud— (Phallic stage) the focus of this stage is pleasure derived from the genitals; childhood masturbation is common and exploration of the child for the genital.

**2. Cognitive development**

Piaget— (preoperational Stage) as described for toddlers, this stage of cognitive development (ages 2 to 7) is characterized by magical thinking and egocentrism.




**Cognitive Skills:**

- Recalls parts of a story
- Counts to ten
- Correctly identifies at least four colors
- Begins to understand the concept of time
- Knows the meaning of same and different
- Begins to use imagination and creativity

**3. Movement:**

**A. Body control or movement:**

- Child will be able to stand on one foot even for a short period of time.
- Child learns to walk up and down the stairs alternating each foot.
- Child learns to dress and feed himself, and use the toilet on his own.

**Gross motor development in the 3- to 6-year-old should include:**

- Becoming more skilled at running, jumping, early throwing, and kicking
- Catching a bounced ball

- Pedaling a tricycle (at 3 years); becoming able to steer well at around age 4
- Hopping on one foot (at around 4 years), and later balancing on one foot for up to 5 seconds
- Doing a heel-to-toe walk (at around age 5)

**B. Hand and finger control:**

- Child can hold a book or pen more firmly.
- Child also learns to turn paper pages.
- Child is able to turn paper pages one page at a time, and write his name.

**Fine motor development milestones at about age 3 should include:**

- Drawing a circle
- Drawing a person with 3 parts
- Beginning to use children's blunt-tip scissors
- Self-dressing (with supervision)

**Fine motor development milestones at about age 4 should include:**

- Drawing a square
- Using scissors, and eventually cutting a straight line
- Putting on clothes properly
- Managing a spoon and fork neatly while eating

**Fine motor development milestones at about age 5 should include:**

- Spreading with a knife
- Drawing a triangle

**4. Language:**

- Child uses 4 or more words to make sentences using basic rules of grammar, such as talking in the past tense.
- When child talks, most of his words are clear enough to understand.

**The 3-year-old uses:**

- Pronouns and prepositions appropriately
- Three-word sentences
- Plural words

**The 4-year-old begins to:**

- Understand size relationships
- Follow a 3-step command
- Count to 4
- Name 4 colors
- Enjoy rhymes and word play

**The 5-year-old:**

- Shows early understanding of time concepts
- Counts to 10
- Knows telephone number
- Responds to "why" questions
- Stuttering may occur in the normal language development of toddlers ages 3 to 4 years. It occurs because ideas come to mind

faster than the child is able to express them, especially if the child is stressed or excited.

When the child is speaking, give your full, prompt attention. Do not comment on the stuttering.

**5. Thoughts and ideas:**

- Child has a very active imagination.
- Child starts to believe in magic, and may fear monsters.
- Child may also be afraid of the dark or being alone.

**6. Social and Emotional Development**

– Preschooler child starts to interact with other people.

– Child learns to accept limits and gains freedom by doing simple tasks and are more independent, such as dressing and feeding himself,

– Show interest in new things

– May want to do things by themselves

– Obey rules

– Try to negotiate problem solving

**Safety is very important for preschoolers**.

– Preschoolers are highly mobile and able to quickly get into dangerous situations. Parental supervision at this age is essential .

– Car safety is critical. The preschooler should ALWAYS wear a seatbelt and be in an appropriate car seat when riding in the car.

– Falls are a major cause of injury in preschoolers. Lock doors that give access to dangerous areas (such as roofs, attic windows, and steep staircases).

– Kitchens are a prime area for a preschooler to get burned , keep the child away from the stove, hot foods, and other appliances.

– Keep all household products and medicines safely locked out of the reach of preschoolers

**Preschooler Needs**

1. Mental security dependency.
2. Nutrition
3. Leadership.
4. Learning social names ( sex ,religion…)
5. Aggressive play games.
6. Guidance.

**Preschoolers developmental Problems**

1. Bad Language.
2. Jealousy- Selfishness.
3. Thumb Sucking.
4. Food like & dislike.
5. Enuresis.
6. Destructiveness.

7. Hurting others.

**Preschoolers Nutrition**

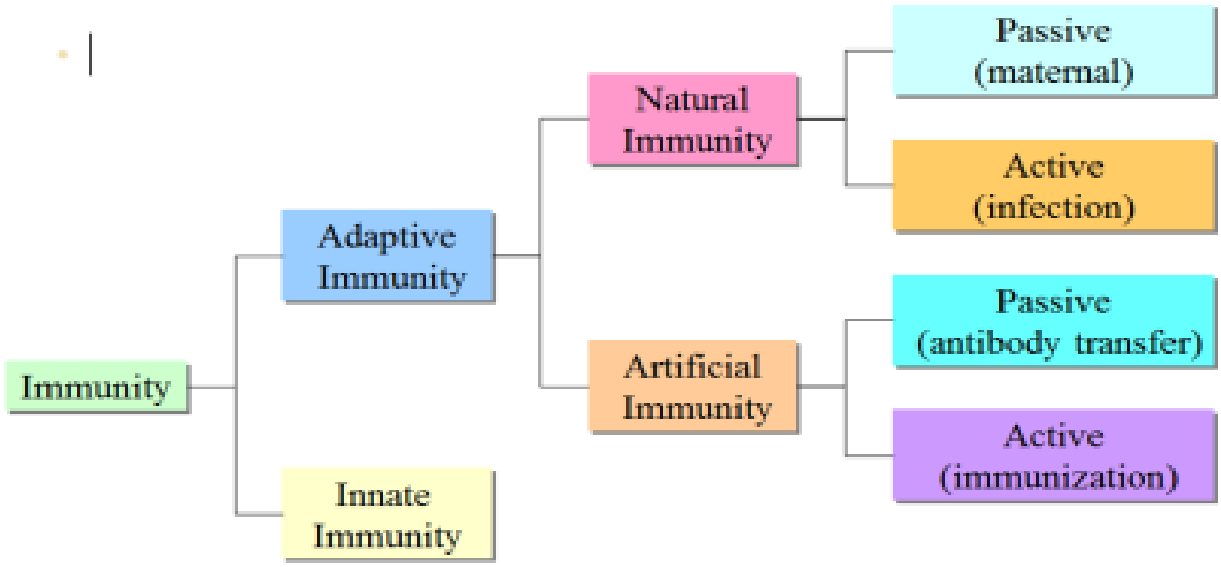
- A preschooler's daily caloric requirement is 90 kcal /kg. Or about 1800 kcal/day.
- Daily fluid intake should average 100 ml/kg, depending on activity level.

## C. Immunization

### Immunization

**Immunization** is the process by which a person becomes protected from a disease

**Vaccine** is a substance that is introduced into the body to prevent infection or to control disease due to a certain pathogen (virus, bacteria or parasite).



**Antibody:** A protein, found mostly in serum that is formed in response to exposure to a specific antigen.

**Antigen:** A variety of foreign substances including bacteria, viruses, toxins and foreign proteins that stimulate the formation of antibodies.

**Antitoxin:** Antibody formed in response to a toxin (antigen).

**Toxin:** A poisonous substance, usually produced by the invading microorganisms.

**How are vaccines made?**

1. Dead (inactivated) pathogens

- IPV (Inactivated polio vaccine )
- Hepatitis A
- pertussis of DPT

2. Live attenuated pathogens

- MMR ( measles, mumps, rubella viruses)
- OVP (oral polio vaccine)
- BCG

3. Subunit / Peptide components

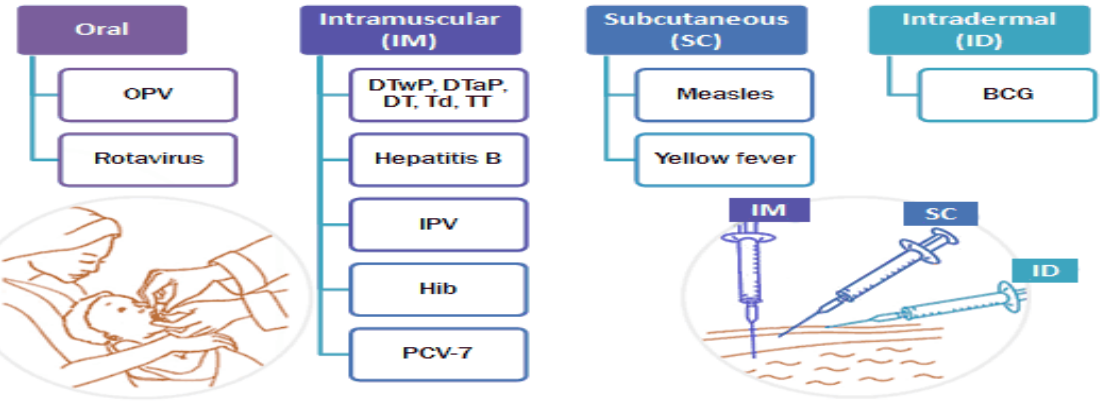
- Hepatitis B

4. Conjugates

- HiB ( *Haemophilus influenzae* type B)
- PCV ( pneumococcal conjugate vaccine )

5. Toxoids

- DT (diphtheria, tetanus toxoids)




**The New Iraqi vaccination Schedule**

| Age | Vaccines |
|---|---|
| First 12 hours<br>1 week to 1 month | BCG, OPV -0, Hep-B 1 |
| 2 m | DPT 1, IPV 1, Hep-B 2 , Hib 1, RV 1, PCV13- 1, OPV 1 |
| 4 m | DPT 2, IPV 2, Hep-B 3 , Hib 2, RV 2, PCV13- 2, OPV 2 |
| 6 m | DPT 3, IPV 3, Hep-B 4 , Hib 3, RV 3, PCV13- 3, OPV 3 |
| 9 m | Measles 1, Vit A (100000 UI) |
| 15 m | MMR 1 |
| 18 m | DPT , Hep-B , Hib (poster dose 1)<br>OPV<br>Vit A (200000 UI) |
| 4 – 6 years | DPT , Hib (poster dose 2) |

| | |
|---|---|
| | MMR, OPV<br>Vit A (200000 UI) |

**Avoid immunization if the child**

1. Fever
2. Fits
3. Under treatment for cancer
4. HIV , AIDS
5. Organ transplant
6. Immunosuppression drugs

**Side effect of vaccine**

1. Pain, redness, tenderness, swelling or Itching at injection site
2. Fatigue
3. Headache
4. Fever
5. Mild rash

## Part IX: Middle childhood and latency period (the school age)

- Biophysical development.
- Psychosocial development.
- Moral and spiritual development.
- Cognitive development.
- School age need.
- Developmental problems during school age.

**Learning Objectives**

**At the end of this unit, the student should be able to:**

1. Describe the characteristics for the following:

    a. Biophysical development.
    b. Psychosocial development.
    c. Moral and spiritual development.
    d. Cognitive development for school-age-children.

2. List the School age need.
3. Describe the Developmental problems during school age.

## The School Stage

**Biophysical development:**

During this period, girls often grow faster than boys and commonly surpass them in height and weight.

Normal height **changes include:** growth of about 5 cm. per year between ages 6 and 12

**The growth of school age**

1. **Physical growth**

    **A.** Weight:

    – School–age child gains about 3.8kg/year.
    – Boys tend to gain slightly more weight through 12 years.

– Weight Formula for 7 - 12 yrs

$$= \frac{(\text{age in yrs} \times 7) - 5}{2}$$

**B.** Height:

– The child gains about 5cm/year.

– Body proportion during this period: Both boys and girls are long-legged.

**2. Physiological growth:**

– Pulse: 90±15 beats/min (75 to 105).

– Respiration: 21±3 breath/min (18–24).

– Blood Pressure: 100/60±16/10.

**The development of school age**

**1. Psychoanalysis**

A. Psychosexual

Freud's psychosexual development theory: Ages 6–12: Latency stage

B. Psychosocial

Erikson and psychosocial development Ages 6 to 12: Industry versus inferiority

**2. Cognitive developmental**

Children in this age group at concrete operations stage of Piaget's cognitive developmental theory that will be starting school.

1. Begin mastering mathematics and reading skills
2. Abilities to think logically about concrete objects and situations
3. Using thinking for any action
4. Can classify and serialize numbers
5. Understand cause and effect
6. Abilities to solve problem and decision making but not right some times

**3. Movement skills:**

- Child's strength, balance, and coordination (ability to move smoothly) improve further.
- Smoothness and speed with physical activities allow him to participate in sports.
- Hand and finger control also improves.

**The Motor Skills**

**a. At 6–8 years,** the school–age child:

- Rides a bicycle.
- Runs Jumps, climbs and hops.
- Prints word and learn cursive writing.
- Can brush and comb hair.

**b. At 8–10 years,** the school–age child:

- Throws balls skillfully.
- Uses to participate in organized sports.
- Uses both hands independently.
- Handles eating utensils (spoon, fork, knife) skillfully.

**c. At 10–12 years,** the school–age child:

- Enjoy all physical activities.
- Continues to improve his motor coordination.

**4. Emotional development**

- Fears injury to body and fear of dark.
- Jealous of siblings (especially 6–8 years old child).
- Curious about everything.
- Has short bursts of anger by age of 10 years but able to control anger by 12 years.

**School-age-needs**

1. Injury prevention
2. Regular exercise is important for musculoskeletal development and refinement.
3. Sleep requirement: 10-12 hours a night.
4. Nutritional needs: daily caloric requirements average 85 kcal/kg/day.
5. Needs for competent.

## School-Age-Developmental Problems

1. Emotional problems: Child may get anxious because of school concerns. Anxiety problems may be caused by school phobia (fear), or trouble keeping up in school.
2. Lack of sleep
3. Learning difficulties
4. Poor nutrition or not enough physical activity
5. Nail biting, finger-Sucking
6. Conduct disorder.
7. Psychosomatic Illness. E.g. Anorexia nervosa, over eating, abdominal pain and constipation

## Part X: Midterm Examination

## Part XI: Adolescence period

- Biophysical development.
- Cognitive and psychosexual development.
- Moral and spiritual development.
- Common needs during adolescence period.
- Common problems during adolescence period.
- Communication.

**Learning Objectives**

**At the end of this unit, the student should be able to:**

1. Explain the biophysical development for adolescents.
2. Discuss the Cognitive , psychosexual ,Moral and spiritual development for adolescents.
3. Describe the common adolescent's needs.
4. Identify and describe the more common adolescents problems.
5. Discuss the communication development for adolescents.

## Adolescent Growth and Development

Adolescence is a time of many transitions for both teens and their families.

As you read the following information, keep in mind that while all teens develop, they don't all follow the same timeline.

### I. Physical Development

Physical development includes:

**Rapid gains in height and weight.**

**During growth spurt**:

- Girls gain approximately 7-35 kg.
- Girls grows 2.5-20 cm.
- Boys gains approximately 7-29,5 kg.
- Boys grows 11-30 cm.

## Cognitive Development

### Formal Operational Thought

- thought became more **abstract** more **idealistic**, and more **logical.**
- Teenagers accumulate general knowledge and start applying the learned concepts to new tasks.
- Interest in learning life skills, such as cooking, fixing things, and driving.
- Concept such as justice, truth, beauty, and power can be understood.
- Spend a great deal of time thinking, reading, and talking about abstract concepts.

### Psychosexual development

**Freud**: **Genital stage**

- Hypothalamus stimulates secretion of pituitary gonadotropins, leading to reproductive maturity.
- Development of both primary and secondary sex characteristics.

**Beginning of puberty is evidenced in girls by:**

- Breast development.
- Pubic and axillary hair growth.
- Menarche (onset of menses).
- Increases in height

**Beginning of puberty is evidenced in boys by:**

- Genital development.
- Growth of facial, pubic, and axillary hair.
- Nocturnal ejaculations.
- Height increases.
- Voice changes

**Psycho-Social Development**

**Erikson: Identity vs. role diffusion**

There are five recognized psychosocial issues that teens deal with during their adolescent years. These include:

1. **Establishing an identity**

   The question of "who am I?". The eventual outcome is people who have a clear sense of their values and beliefs, occupational goals, and relationship expectations. People with secure identities know where they fit (or where they don't want to fit) in their world.

**2. Establishing autonomy**. establishing autonomy means becoming an independent and self-governing person *within* relationships..

**3. Establishing intimacy**. Many people, including teens, equate intimacy with sex.

Intimacy refers to close relationships in which people are open, honest, caring and trusting.

**4. Becoming comfortable with one's sexuality**. the teen years are the prime time for the development of sexuality.

**5. Achievement**. the teen years are a time when young people can begin to see the relationship between their current abilities and plans and their future vocational aspirations.

**Moral and Spiritual development**

**Post conventional autonomous, (Principal level)**

Correct behavior tends to be defined in terms of general individual rights and standards that have been examined and agreed on by the entire society. There is emphasis on the possibility for changing law in terms of societal needs and rational consideration.

**Common needs during adolescence period**

**1. Increased Nutritional Needs**

**a. Calories**.

- Adolescent Boys ages 11 to 18 need between 2,500 and 2,800 calories each day.
- Adolescent girls need approximately 2,200 calories each day.

**b. Protein**.

- Protein is important for growth and maintenance of muscle. Adolescents need between 45 and 60 grams of protein each day.

**c. Calcium.**

- Daily requirement 1,200 milligrams of calcium.

**d. Iron**.

- Adolescent boys need 12 milligrams of iron each day, while girls need 15 milligrams.

**2. Adolescent Sleep Needs**

**3.The Need for Physical Activity.**

Physical activity should include opportunities for developing both large and small muscles.

**4. The Need for Competence and Achievement.** It is common for young adolescents to feel self-conscious and unsure of their abilities during this period of rapid growth..

**5. The Need for Self-Definition.** Children need lots of opportunities to explore who and what they are becoming and how they relate to the world around them as a member of their sex, race, family, culture, community, etc.

**6. The Need for Creative Expression.**

These opportunities help children develop an understanding and acceptance of themselves as they use speaking, writing, singing, dancing, drama, and the visual arts to express their emerging feelings, interests, thoughts, talents, and abilities.

**7. The Need for Positive Social Interaction.**

These positive relationships can provide comfort, support, and security as they are confronted with and experience new ideas, views, values, and feelings.

**8. The Need for Structure and Clear Limits.** As older children grow in their need for independence and freedom,

**9. The Need for Meaningful Participation.** they need opportunities to develop and use new talents, skills, and interests in the context of the "real world."

**Adolescent developmental problems**

1. postural defect.

2. Anemia.

3. Acne vulgaris.

4. Nocturnal emission.

5. Masturbation

6. Drug and alcohol abuse.

7. Depression and Suicide.

8. **Eating Disorders:** Two types of eating disorders are anorexia nervosa and bulimia. **Anorexia nervosa** is an eating disorder that involves the relentless pursuit of thinness through starvation. **Bulimia** involves a binge-and-purge sequence on a regular basis. These are primarily female disorders caused by societal, psychological, and physiological factors.

9. Juvenile Behavior.

10. adolescent Pregnancy

**Communication**

- Adolescent able to understand abstract ideas and theories.
- Give evidence to support a claim.
- Able to interpret social class and emotional state of the sender from verbal and non-verbal cues.
- Able to analyze arguments in relationship to the source.
- Able to gain and maintain the attention of others in socially acceptable ways.
- Communicates clearly and effectively.
- Near adult cognition, capable of logical thought.