

# Infant stage

## **Growth and Development of Infant stage**

It is the period which starts at the end of the first month up to the end of the first year of age. During this year, the infant grows and develops skills more rapidly.

## **The normal growth and development of infant**

### **Physical growth**

**-Weight:** Infant will double birth weight by the age of 6 months, and will triple his/her birth weight by the age 1 year old.

#### **The infant gains:**

- ☐ Birth to 4 months →  $\frac{3}{4}$  kg /month
- ☐ 5 to 8 months →  $\frac{1}{2}$  kg / month
- ☐ 9 to 12 months →  $\frac{1}{4}$  kg /month

Calculating infant's weight

$$\text{Weight} = \frac{\text{Age in months} + 9}{2}$$

**Length:** infant will increase about 2.5 cm per month during the first 6 months and 1  $\frac{1}{2}$  cm per month at 7 – 12 months. This increase occurs mainly in the trunk, rather than in the legs.

#### **Head size:**

-At birth, an infant's head circumference averages about (33-35 cm) and is usually slightly larger than the chest circumference.

-During the first 6 months head circumference increases approximately 1.5 cm per month and increase 0.5 cm monthly during the second 6 months.

-The average size is 43 cm at 6 months and 46 cm at 12 months.

-Posterior fontanel closes by 6-8 w of age.

-Anterior fontanel closes by 12-18 months of age

## Chest circumference

The chest also grows rapidly, and equals the head circumference by the end of the first year.

## Physiological growth of infants-:

Pulse 110-150 b/min

Resp  $35 \pm 10$  c/min

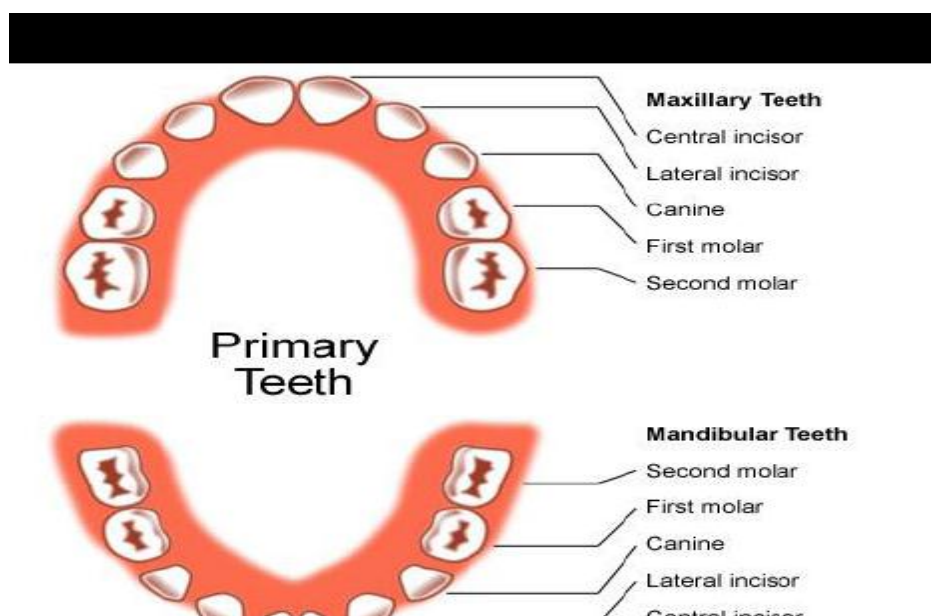
Blood pressure  $80/50 \pm 20/10$  mmHg

## Dentition:

Eruption of teeth starts by 6–8 months of age. It is called "Milky teeth" or "Deciduous teeth" or "Temporary teeth".

## Average age for teeth eruption:

Lower central incisors Erupt at 6 months  
Upper central incisors Erupt at 8 months  
Upper lateral incisors Erupt at 9 months  
Lower lateral incisors Erupt at 11 months  
Lower first molars Erupt at 12 months  
Upper first molars Erupt at 14 months  
Lower cuspids Erupt at 16 months  
Upper cuspids Erupt at 18 months  
Lower 2nd molars Erupt at 20 months  
Upper 2nd molars Erupt at 24 months.



## **Locomotion (motor growth) ( gross and fine)**

### **At 2 months**

**Gross:** Hold head erects in mid-position position

Turn from side back

**Fine:** Hold a rattle le briefly when placed in his hand

### **At 4 months:**

**Gross:** Sit with adequate support.

Roll over from front to back.

Good head control

**Fine:** Objects will be involuntarily grasped and dropped without notice.

Plays with fingers, carry object to mouth.

### **At 6 months:**

**Gross:** Lift chest and upper abdomen when prone.

**Fine:** Hold own bottle. Transfer object from one hand to other

### **At 8 months:**

**Gross:** Site alone.

Pull him self to standing position with assistance.

**Fine:** Drink from cup with assistance.

Eat finger food that can be held in one hand.

### **At 9 months:**

**Gross:** Raises to a sitting position alone

Crawl.

**Fine:** hold bottle with good hand mouth coordination

### **At 10 months:**

**Gross:** Creep well (use hands and legs).

**Fine:** Can grasp small objects using thumb and forefinger.

### **At 11 months:**

**Gross:** Walk holding on furniture.

Stand erect with minimal support

**Fine:** Take toys and put it inside cup or box

## **At 12 months:**

**Gross :** Stand alone for variable length of time.

Site down from standing position alone.

Walk in few steps with help or alone

**Fine:** Pick up small bits of food and transfers them to his mouth

## **Emotional development**

Infant emotions are unstable, where it is rapidly changes from crying to laugh. Express felling through crying and laugh

**By 10 months:** can express recognizable emotions, such as anger, sadness, pleasure, jealousy and affection .

## **Social development**

He learns that crying brings attention.

The infant smiles in response to smile of others.

The infant shows fear of stranger (stranger anxiety).

He responds socially to his name.

## **Psychosocial development (Erikson)**

### **Developing a Sense (Trust vs. mistrust) from birth to 1 years.**

-The infant develops sense of trust through interaction with caregiver (mainly the mother), learns to trust others through the relief of basic needs as feeding, comfort, stimulation.

-Infant whose needs are consistently unmet will develop a sense of mistrust. Failure to learn "delayed gratification" leads to mistrust. Mistrust can result either from too much or too little frustration.

## **Cognitive development (Piaget)**

### **Sensorimotor stage from birth to 2 years,**

- Coordinates sensory experiences with physical action,
- Follows an objects with eyes, recognizes familiar faces, turn head to locate sound, can fixate on small objects. Adjust posture to see.
- Infants learn to separate themselves from other objects in the environment.
- Respond to name.
- They learn that parts of the body are useful; for example, the hands bring objects to the mouth and the legs help them move to different locations.
- Searches for hidden toy.

### **Language Development (Speech Milestones)**

1-2 months: make sounds such as ah, eh, and uh .

2-6 months: laughs

8 months: babbles sounds as ma ma, da da.

9 to 10 months

They comprehend the meaning of the word "no" and obey

Simple commands

1 year: they can say three to five words with meaning

### **Psychosexual development (Freud)**

#### **According to Freud oral stage start from birth to 18 months**

During this stage, the mouth is the pleasure center for development.

Freud believed this is why infants are born with a sucking reflex and desire their mother's breast. If a child's oral needs are not met during infancy, he or she may develop negative habits such as nail biting or thumb sucking to meet this basic need.

### **Infant needs**

1. Love and security
2. Feeding
3. Warmth and comfortable
4. Pleasure of sucking
5. Sensory stimulation

### **Daily care of infant**

- **Cleaning baby's face and head**
- **Eye**

With clean hands, moisten a cotton ball with warm water and gently clean infant's eyelids, wiping from inner eye to outer eye. Use a different piece of cotton for each eye.

- **Ears**

Use a cotton ball to wipe behind and around the outside of baby's ears.

- **Hair**

Washing baby's hair and dry it by the towel back and forward across the scalp.

- **Oral and teeth care**

Clean baby's gums and tongue using water and a washcloth after morning and evening feeds. Wipe front and back of teeth using water and a clean washcloth. At 12 months use a soft infant toothbrush to brush teeth with water at least twice a day.

- **Nail care**

Use special baby nail scissors; Work with someone else if it helps one holds the infant as the other trims the nails. Try trimming baby's nails when he's asleep, in the highchair or while singing a favorite song.

- **Bathing**

The purpose of bath is not only cleanliness but also to Provide opportunity to note his growth and development, to promote comfort of the infant, To stimulate circulation. A gentle bath at night before bed may help an infant relax and sleep better.

- **Diaper care**

Each baby should have about 8-10 wet and/or dirty diapers a day through the first six weeks of life. After about six to eight weeks see this decrease to between 4-6 wet diapers a day, and some baby's may only have a bowel movement once every week or two.

Lift the infant up by the ankles in order to expose the buttocks, washing and rinsing the buttocks, dry it and apply ointment to the anal area. And apply the clean diaper

- **Feeding**

Infants grow very quickly and have a need to consume milk, either from a breast or bottle, to help support and sustain that growth. Breast milk or formula is a choice each parent should make before a newborn arrives so they can be prepared with the appropriate knowledge and equipment that will be needed to feed a infant. Most babies need to be fed about every 2-4 hours because they have small stomachs

- **Bonding**

Infant massage and skin to skin time are important bonding times when caring for an infant to make baby feel safe, secure and loved, so take some time out of the day to rub baby down with lotion or hold him/her up

- **Sleep**

The total daily sleep is approximately 15 hours. The number of naps per day varies, infants may take one or two naps by the end of the first year. Uncomfortable wetness or dirty diapers can also wake a baby.

### **Signs of Possible Developmental Delays**

- Poor sucking reflex, absent or minimal blink reflex to bright light.
- Doesn't focus and follow a nearby object that is moving side to side.

- Moves arms and legs minimally and infrequently; appears stiff.
- Response to loud sounds is absent or minimal.
- Unable to sit alone by age 9 months, Unable to walk alone by 18 months
- Unable to transfer objects from hand to hand by age 1 year

## **Normal toddler child**

**Definition:** - Is a stage of growth and development from 1-3 years of age, it is the beginning of independence or autonomy. It is a time of intense exploration of the environment as the child attempts to find out how things work.

### **Physical growth**

**Weight:** - The average weight gain 2Kgm/year ranged from 1.8-2.7kgm/year. The drop in weight gain at the second year is steeper than for height. This explains why the toddler child looks slim. Formula to calculate normal weight of children over one year of age [age in years X 2] + 8 = weight kg.

E.g. 2 years old child weight = [2X2] +8 = 12 kg.

**Height:** - The increase of height is slow. The total increase of height is 10-12.5cm. The following formula is usually used to calculate normal height of children over one year of age.

[Age in year X5]+80=height in cm

E.g. length of 2 years child = [2X5] +80=90cm

**Head circumference:** - The usual increase in head circumference during the second year is 2.5cm, then until at age 5 years the increase is less than 1.25cm /year. The anterior fontanel closes between 12-18 months of life.

**Chest circumference:** - It continues to increase in size and exceed head circumference during the toddler years, its shape also changes as the transverse or lateral diameter exceed the anteroposterior diameter. After the second year the chest circumference exceeds the abdominal measurement.

**Body proportions:** - The toddler child is taller, leaner appearance; however eh retain a sequel, "pot billed ' appearance because of the less well developed abdominal musculature and short legs. The legs retain a slightly bowed during the second year from the weight of the relatively large trunk. This lateral curvature disappears by 3 years of age.

### **Teething:-**

By the second year of age, primary dentition of 16 teeth and 20 teeth by the age 30 months (2 1/2years).

### **Physiological growth**

**Pulse:** - pulse rate decrease, its range from 80-130 beats/minute, the average is 110 beats/minute

**Respiration:** - 20-30 breath/minute.

**Blood pressure:** - 80/50 mmHg.

**Bowel and bladder control:** - bowel control between ages 18 and 24 months, day time of bladder control between ages 24 and 30 months

### **Senses:-**

- Visual acuity is about 20/40, full binocular vision is well developed by the age of 12 months. Any evidence of persistent strabismus should receive professional attention before age 4 year.
- The senses of hearing, smell, taste and touch become increasingly well developed.
- The skin becomes functionally more mature, the epidermis and dermis are more lightly bound together, increasing their resistance to infection and irritation.
- Hair grows thicker and coarser and usually darkens and loses some curliness. Fine hair is evident on the lower arms and legs



## **Motor Development**

### **At 15 months**

- Gross
  - Walks without help (usually since age 13 months)
  - Creeps up stairs
  - Kneels without support
  - Cannot walk around corners or stop suddenly without losing balance

### **18 month**

- 1- Walks upstairs with one hand held.
- 2- Run clumsily.
- 3- Walks backward
- 4- Pulls a toy behind him and pushiest.
- 5- Jumps in place with both feet.
- 6- Seats self on chair.
- 7- Builds a tower 3-4 blocks.
- 8- Remove simple clothes e.g. shoes.
- 9- Holds cup with both hands to lips and drinks well with little spilling.
- 10- Hands a cup to his mother or drops it on floor.
- 11- Can fill his spoon.

### **24 month:-**

- 1- Run well
- 2- Walk up and down starts.
- 3- Build a tower of 6-7 blocks.

4- Open the door by turning door- knob.

5- Holds cup with one hand.

6- Copies or imitate vertical.

7- Steady gait.

**30 months:-**

1- Takes a few steps on tip toe.

2- Stand on one foot alone

3- Build a tower of 8 blocks.

4- Button and unbutton front buttons.

5- Rides a kiddie car

6- Hand fist.

7- Can throw a large ball 4-5 feet.

8- Copies horizontal or vertical line.

**Language development**

**15 months:** - Says 4-5 words (mainly names).

**18 months:** - Says 10 words more.

**24 months:** - Vocabulary of almost 300 words. Use 2-3 word phrases.

**30 months:** - Talks constantly

Use plurals.

Gives first and last name.

**N.B** The normal child will begin to speak by about 15 months of age, if the child doesn't speak by 2 years old this delay is due to.

1- Intelligence.

2- Illness.

3- Poor models.

4- Negativism

5- Deafness

6- Social and cultural development.

7- Learning two languages at the same time.

8- Sex: boys are usually slower than girls in learning to talk.

### **Psycho sexual development:-**

According to Freud's theory psychosexual development the toddler is in **anal stage**. Pleasurable sensations are focused on anal activity the chief pleasure for the child involves retention or expulsion of feces. The primary contest revolves around toilet training. He believed that personality characteristics are determined by how parents and others treat children during this process. Rigid demands for cleanliness as and for example may result in over attention to as an adult.

### **Social development:-**

According to Erickson's theory of psychosocial development the toddler develop **sense of autonomy Vs shame or doubt** two and 3 years olds are no longer completely dependent on adult they learn that they are someone on their own If children of this age are either not allowed to do the things they can do or pushed into doing something for which they are not ready, they may develop a sense of shame or doubt about their own abilities and fail to develop self confidence. Parents don't help children acquire sense of autonomy by allowing them to do every things for themselves.

### **\*Cognitive development:-**

- Up to 2 years of age the toddler is still in the sensory motor stage (0-2 yrs.) The toddler uses his senses and motor development to differentiate self from objects.
- The fifth sub stage of sensory motor phase is the tertiary circular reaction (12-18 months) in which actions are still repeated and thus

circular. They are no longer carbon copies of each other children now seek out novelty.

- The sub stage six is:- Invention of new means through mental combination (18-24 month). It is the beginning of mental representation - The children now think of an object independent of its physical existence children are now capable of deferred imitation, that is they can observe some act and later imitate it for example before going to bed an eighteen month old may make pedaling motion with the feet, just as the child saw older sibling do while riding bicycle hours before

- Pre operational stage (2-7yrs) which divided into two sub stage pre conceptual (2-4yrs) and intuitive phase (4-7yrs). Toddlers from 2-3 yrs will be in the pre conceptual phase of cognitive development where he is still egocentric and cannot take the point of view of other people.

### **Behavioral characteristics of the toddler**

- 1- Negativism
- 2- Ritualistic behavior
- 3- Slowness in carrying out requests
- 4- Temper tantrums
- 5- Strong expression of emotion

### **Need of toddler child**

- 1- Love and security
- 2- Independence in self care (graded independence)
- 3- Toilet training (Bowel control at 18 months, bladder control in day time 2-3 years, bladder control at night 3-4 years)

### **Care of the toddler child**

I- Physical care: - this will include bathing, dental care to prevent teeth decay, clothing and freedom to play.

II- Sleep: - Toddler child sleep on the average 12-14 hours out of 24 hours, including a day time nap of one to two hours.

III- Safety measures: - The common sources of the accidents among toddlers are

- |                |                            |
|----------------|----------------------------|
| 1- burns       | 2- falls                   |
| 3- Poisoning   | 4- motor vehicle accidents |
| 5- Suffocation | 6- drowning.               |

IV- Health supervision: - Physical checkup, immunization and dental care.

IV- Nutrition: - The toddler age group needs 1200 calories per day, the primary aim in dietary management of this children is to accustom them to chopped foods and to remove all strained food from the diet. The toddler child needs 1.2 gm/kg of protein to meet demands for muscle tissue growth and high activity level, the need for minerals such as iron, calcium and phosphorus is still high.

**The mother should be:-**

- 1- Serve food in small amounts.
- 2- Chop or cut food in to small pieces.
- 3- Serve food which includes all groups as milk, meat, fruits vegetables Cereals, fat and carbohydrates.
- 4- Serve nutrition snacks between meals.
- 5- Give vitamins and iron supplement.

**Parental guidance during the toddler years**

- 1- Prepare parents for expected behavioral changes of toddler especially negativism.
- 2- Prepare parents for potential dangers of the home as poisoning.

- 3- Discuss need for firm but gentle discipline and ways in which to deal with negativism and temper tantrums.
- 4- Encourage periodic separation between parents and the child.
- 5- Assist parents to choose suitable toys for this age.
- 6- Emphasize need for dental supervision.
- 7- Discuss developing fears such as darkness or loud noises.
- 8- Prepare parents for signs of regression in times of stress.
- 9- Discuss investigation of nursery school.

## Preschool child

### **Growth and development of Preschool (3 to 6 years)**

#### **- Physical growth**

##### **Weight**

- The preschooler gains approximately 1.8 kg/year, 3year = 14kg

##### **Height**

- ☐ Child doubles birth length by 4-5 years of age.
- ☐ Formula to calculate weight and height are the same as toddlers

#### **- Physiological growth**

##### **Vital signs**

1. **Pulse:** 80-120 beat / min (average 100 beat / min).
2. **Respiration:** 20-30 cycle/ minutes.
3. **Blood pressure:** 100/67 + 24/25.

#### **Motor Development:**

##### **At 3 Years**

##### **Gross motor**

Rides a tricycle.

**Fine motor**

Copies a circle and imitates a cross and vertical and horizontal lines.

**At 4 Years****Gross motor**

- Hops, jumps, and skips on one foot.
- Rides a tricycle or bicycle with training wheels.

**Fine motor**

- Copies a square and traces a cross.
- Draws recognizable familiar objects or human figures.

**At 5 Years****Gross motor**

- Skips, using alternate feet.
- Jumps rope.

**Fine motor**

Draws a stick figure with several body parts, including facial features

**Cognitive Development:****According to piaget theory**

**The preschool up to 4 years of age is in the pre-conceptual phase.** He begins to be able to give reasons for his belief and actions, but not true cause-effect

- Exhibits egocentric thinking which lessens as the child approach age 4.
- Short attention span.
- Learns through observing and imitating.
- Display animism.
- By the age 4 understanding the concept of opposites (hot / cold – soft / hard).

**Language Development:****3years:**

- Vocabulary of 800- 1000 words.
- Uses 4 words sentences.
- Ask why.

**4 years:**

- Vocabulary of 1500 words.
- Uses 3 to 7 words sentences.
- Uses —I|| in his speech

**5 years:**

- Vocabulary of 2100 words.
- Asks for the meaning of words.

**Emotional Development**

- ☐ Fears the dark
- ☐ Tends to be impatient and selfish
- ☐ Expresses aggression through physical and verbal behaviors.
- ☐ Shows signs of jealousy of siblings.

**Psychological development**

According to Freud's theory of psychological development the preschool child develop a phallic stage (3-7)

**Social Development****According to Erikson theory****☐ The preschooler is in the stage where he develops a sense of initiative versus guilt,**

☐ The child wants to learn what to do for himself, learn about the world and other people.

- Initiates activities with others .
- Act out the roles of others people ( real & imaginary ).
- Like exploring new things .
- Enjoy sports, shopping, cooking, working .
- Cooperate with other children .

☐ Development a sense of guilt occurs when the child feels that his or her imagination and activities are unacceptable

- ☐ He is active imagination, creative and energetic.
- ☐ Egocentric
- ☐ Less dependent on parents
- ☐ May have dreams & night-mares



### **Needs of Preschool child:**

#### **1- Security and independence**

- The child feels love and security when he has two parents. He needs their love and understanding.

#### **2- Guidance**

- The parents besides showing love for him must teach and guide him toward maturity by suggestions not commands helpful the child in forming good relation with other people.

#### **3- Sex information**

- Sex education during pre-school years is important.
- The child learns that he or she is a boy or a girl.
- Parents should answer the child directly and honestly.

#### **4- Learning language**

- The pre-school child learns to communicate his feeling and ideas.
- This is a period of rapid vocabulary growth.
- He also learns by imitating adult and other children.

#### **5- Religious education**

- Religious can be understood taught that —God loves him.

### **Problems of Preschool child:**

- Thumb-Suckling:
- Encopresis
- Selfishness
- Masturbation
- Enuresis
- Bad language
- Hurting Others
- Destructiveness

### **Care of Preschool child:**

#### **1- Physical Care**

- Pre-School child is gaining competency in self-care. Feeling of security in his home environment will help him to become independent in self-care.

- He needs help in his bath.
- He learns to feed himself, to dress and undress, to wash his face and hands, to brush his teeth and to toilet himself.

## **2- Sleep patterns**

- The average pre-school sleeps 11 to 13 hours per day.
- The sleep of the 3-years old is frequently disturbed at night.
- Sleep problems are common and include, nightmares, night terrors.
- Most pre-school needs an afternoon nap until age 5 years.
- Bedtime rituals persist.

## **3- Safety measures**

- Since pre-school children have more freedom, playing outdoors alone and frequently away from the safe environment, more accident are likely to occur.

## **4- Health supervision**

- Regular visits for physician are important at intervals usually every six months or yearly.
- The physician or nurse give complete examination as visual and auditory perception for the child should be records the growth, give advises about nutrition and any problems which occur in the management of the child.

## **5- Nutrition**

- The pre-school child is less interested in eating than he was during infancy because he interested in exploring his environment.

# **School Age Children**

## **Growth and development of School Age Children**

**School age:** That the period from 6 to12 year. It is characterized by eruption of permeated teeth and finished by beginning the puberty.

### **Physical growth**

The growth is gradual until puberty.

#### **□ □ Weight:**

School-age child gains about 3.8 kg/year.

□ □ Formula is  $\frac{(\text{age in years} \times 7) - 5}{2}$

Weight at 6 years → 20kgm.  
weight at 12 years → 40kgm(double weight at 6 years).

**□ □ Height :**

The average gain in height 6cm/ year

□ □ Formula is the same as toddlers and preschoolers.

at 6 years → 117cm.

at 12 years → 150cm(3 times birth length).

**Dentition:** Permanent teeth erupt during school-age period, starting from 6 years

**Head circumferences**

At 6 years ..... 51cm

At 12 years ..... 53cm

**Chest circumference (CC)** is more than head circumference (HC)

**Mid arm circumference** at 12 years it is 17 to 18 cm.

**Physiological growth**

**Vital signs :**

Temperature: 37°C

Pulse: 95 beats /min

Respiration: 19-21 c/min

Blood pressure: 100/60 mmHg.

**GIT system:** maturation in GIT & the child able to digest any food.

**Genitourinary system:** is maturity in kidneys are better to concentrate urine.

**Circulator system:** soft heart sound

**Neurological system:** improved in memory & ability to conceptualization & full voluntary control of fine motors function.

**Skeletal and muscular development:** Muscles are more complain at this age so good posture should be encourage and good standing position.

**Endocrine system** is matured expect reproductive function

**The immunological system:** that function is to eliminate the foreign to the body so the lymphoid tissue is matured.

**The sense organ:** the smell and taste, the child can differ between objects at this stage.

### **Motor Development:**

#### **At 6 – 8 years**

- ☐ ☐ Ride a bicycle .
- ☐ ☐ Runs, jumps, climbs, and hops .
- ☐ ☐ Can brush and comb hair .

#### **At 8- 10 years**

- ☐ ☐ Begins to participate in organized sports .
- ☐ ☐ Use both hands independently .
- ☐ ☐ Prints fluently .
- ☐ ☐ Increased smoothness and speed in fine motor control .

#### **At 10- 12 years**

- ☐ ☐ Enjoy all physical activities .
- ☐ ☐ Motor coordination continues to improve

☐ ☐ Psychosexual development according to **"Freud":he termed this stage "latency period"** in which the school child turns his attention and focus from sexuality to tasks of socialization and development of self-esteem.

### **Cognitive Development:**

- ☐ ☐ At 7-11 years, the child able to function on a higher level in his mental ability, give similarities and differences between two things from memory and able to understand past, present, and future.
- ☐ ☐ Greater ability to concentrate and participate in self-initiating quiet activities that challenge cognitive skills, such as reading, playing computer and board games.

☐ ☐ **According to "Piaget" the child is in the stage of "concrete operation"**

### **Language Development:**

- Sentence structure and use of grammar continue to improve.
- Talk in full sentence.
- Speech proceeds from egocentric to social.

### **Emotional Development:**

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

### **Social Development:**

- o Continues to be egocentric .
- o The child develops sense of Industry
- o Failure to develop a sense of industry result in inferiority (feelings of inadequacy) and child become more isolated.
- ☐ ☐ Psychosocial development according to "**Erikson**": Erikson termed the psychosocial crisis faced by child aged from 6 to 12 years

### **"industry versus inferiority".**

### **Needs of school age children:**

- ☐ ☐ Sleep and rest.
- ☐ ☐ Bathing
- ☐ ☐ Nutrition
- ☐ ☐ Exercise and activity
- ☐ ☐ Dental health
- ☐ ☐ Education

a- Sex education. b- Religious education.

### **School age problems :**

a) School phobia: All organic cause must be ruled out before school phobia. The most common complaints are abdominal pain, headache, vomiting, and regression.

b) Learning difficulties: The learning difficulties are represented in variety of specific learning disabilities in children. The difficulties are in reading, writing, and understanding.

c) Behavioral problems: Children sometimes employ aggressive, negative or disobedient behavior in an attempt to feel important and control others. The forms of aggression are :

a- Lying b- Stealing c- Cheating

\*Health education: Encourage the rewarding system for desired behavior rather than punishing the undesired behavior .

**d) Nutritional problems:**

A. Overfeeding (obesity) B. Underfeeding

\* Informing parents about qualities of foods rather than quantities .

**e) Communicable diseases:**

E.g.:Diphtheria, Typhoid fever, Hepatitis A virus .

\*The nurse should assess the immunization status of school age and review the times when booster doses are needed .

**f) Allergy:**

o Bronchial asthma, sinusitis, urticaria.

o Streptococcus & staphylococcus infection

- Streptococcus infection as tonsillitis, rheumatic fever

- Staphylococcus infection as nephritis

**g) Dental problems:**

o Good oral hygiene habits and brushing should be done after meals .

o Referral to dentist every period for dental check-up.

**h) Skeletal problems:**

- Bone fracture

- Scoliosis

**i) Accidents:**

- Motor car accident

- Drowning

- Electric shock

\* Instruct parent about first aids & methods of prevention these accidents.

# Adolescence

**(Age 12 to 18 Years)**

## **NORMAL GROWTH AND DEVELOPMENT OF ADOLESCENCE**

**The age of adolescence is generally regarded as 11-19 years. It is the time for:**

- Transition from childhood to adulthood.

- Formulating a sense of personal identity.

- Gaining freedom from the family unit.
- Sometimes driving parents out of their minds.
- According to recent research, the brain is not completely
- Developed until late adolescence.
- Changing hormonal levels activate development of secondary sex characteristics:
- Growth of pubic hair.
- Menarche.

### **Growth Spurt:**

- Physiologically, developmental age is calculated by skeletal age.
- Although trunk growth accounts for the greatest increase in adolescent's
- Height, the sequence of growth begins in the extremities. During this sequence both sexes may worry about sex-inappropriate changes.

### **Sex hormones:**

- They influence epiphysis (growth plate) closure in the long bones of the extremities, causing a close relation between the pace of maturation and eventual height.
- The predominant female sex hormone, estrogen, stimulates the accumulation of more subcutaneous fat in girls creating a softer curved appearance.
- Testosterone, the important male sex hormone, stimulates greater growth in denser bone and muscle tissue and therefore causes a greater weight gain in males.

### **Skin Characteristics:**

- The increased activity of the sebaceous glands contributes to acne. These glands produce sebum, a mixture of fatty acids, lipids, and sterols, which helps to keep the skin moist by inhibiting the evaporation of water.
- The environment influences the amount of secretion; more sebum is produced in hot, humid climate.
- Increased sweat gland activity requires careful cleaning of the body and airing and cleaning of clothes.

### **Body Proportion Changes:**

- Sex differences are apparent in body proportions as well as in height and weight gains.
- The straightening of the facial profile, with greater projection of the nose and prominence of the jaw, is more marked in males; male growth also results in broader shoulders, with relatively narrower hips and larger legs in proportion to trunk length. The shoulders of females are narrower, the hips are wider, and the legs are shorter in relation to trunk length.

### **Menstrual Cycle:**

Menstrual hygiene requires special attention because the irregularity of girls' early menstrual cycle often leads to embarrassment caused by soiled clothes, hygienic care. Frequent bathing and changing pads are important points to be taught.

### **Nutritional Needs:**

☐ ☐ Adolescence is a nutritionally vulnerable time because of the increase in physical growth and the accompanying changes in life style and food habits. Adolescents show a markedly increased need for calories especially during the growth spurt. The observation that teens, especially males, seem to be hungry and eating all the time may

☐ ☐ relate to an imbalance between the size of the stomach and the amount of calories needed.

### **The average caloric needs are as following:**

- **Females:** 11-14 years 2200 calories.  
15-18 years 2100 calories.
- **Male:** 11-14 years 2700 calories.  
15-18 years 2800 calories.

### **Physical Health.**

☐ ☐ Puberty marks the beginning of accelerated physical growth which may double nutritional requirements for:

- ☐ ☐ Iron.
- ☐ ☐ Calcium.



- ☐ ☐ Zinc.
- ☐ ☐ Protein.

**Growing independence, the need for peer acceptance, concern with physical appearance as well as active lifestyle may affect:**

- ☐ ☐ Eating habits.
- ☐ ☐ Food choices.
- ☐ ☐ Nutrient intake.
- ☐ ☐ Nutritional status.

### **Cognitive Development.**

- ☐ ☐ Applies to possibilities as well as the realistic.
- ☐ ☐ Relates to the future as well as the present.
- ☐ ☐ Is evident in hypothetical-deductive statements.
- ☐ ☐ Demonstrates logical reasoning.
- ☐ ☐ Advances in thinking can be divided into several areas:
- ☐ ☐ It includes a more logical thought process and the ability to think about things hypothetically (suppositional, conditional).
- ☐ ☐ It involves asking and answering questions.
- ☐ ☐ Developing abstract thinking skills means thinking about things that cannot be seen, heard or touched (faith, trust, beliefs, spirituality).

### **Physical Development**

Voice changes.

Growth of underarm hair.

Facial hair growth.

- Increased activity of sweat glands.
- Increased production of oil and acne.
- Body parts do not grow all at the same rate.
- This can lead to clumsiness as they try to cope with limbs that seem to have grown overnight.
- They frequently sleep longer. They need more sleep to allow their bodies to conduct the internal work required for such rapid growth.
- Others may be concerned because their physical development is not at the same rate as their peers.
- They may feel shame about demonstrating affection to the opposite sex parent.
- An adolescent girl who used to hug and kiss her dad when he returned home from work may now shy away.

- A boy who used to kiss his mom good night may now just wave to her.

**Erikson:** Identity V. Identity Confusion

**Freud:** Genital stage

**Piaget:** Formal operational  
(11 years and up)