

THE HEALTH MAINTENANCE VISIT

- Disorders of growth and development are often associated with severe illness or might be because of neglect.
- **Growth:** increase in size.
- **Development:** increase in function of processes related to body and mind.
- **Health visits at:** 2-4-6months, 12months, 18months, 2yrs, 2.5 yrs, 3yrs, and then annually up to 6yrs.

CHAPTER 5: NORMAL GROWTH

- **Measurements of:** length/height – weight – head circumference should be obtained.
- Growth should be measured and compared with statistical norms in a standard fashion of growth charts.
- Growth is assessed by plotting accurate measurements on growth charts and comparing each set of measurements with previous measurements obtained at health maintenance visits or other visits if there is a concern over the child's growth pattern.
- BMI must be calculated to determine whether an individual is overweight or at risk for being overweight.
- When caloric intake is inadequate, the weight percentile falls first, then the height, and lastly, the head circumference (failure to thrive).
- An increasing weight percentile in the face of a falling height percentile suggest hypothyroidism.

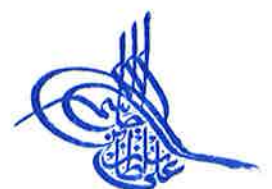
CHAPTER 6: DISORDERS OF GROWTH

- The most common reasons for deviant (منحرف) measurements are technical (i.e. faulty equipment and human errors in measurement or plotting).
- Newborn's head is significantly larger in proportion to the rest of their body (1/4 of the body). This difference gradually disappears as the child gets older.
- The growth pattern of a child with low weight, length and head circumference is commonly associated with familial short stature.
- A child who starts puberty later than others may have the normal variant called constitutional short stature.
- In many children, growth moves to lower percentiles during their first year of life until they match their genetic programming and then grow along new, lower percentiles.
- Children recovering from neonatal illnesses often exhibit (catch-up growth).

CHAPTER 7: NORMAL DEVELOPMENT

- Primitive neonatal reflexes are unique in the newborn period.

Moro reflex	Allowing head gently to move back suddenly
Rooting reflex	Touching the corner of the infant's mouth
Sucking reflex	Occurs with almost any object placed in mouth
Grasp reflex	Placing object onto the infant's palm
Asymmetric tonic neck reflex	Placing infant supine & turning head to side



- **Later infancy:** with the development of gross motor skills, the infant is first able to control his/her posture, then proximal musculature, and lastly distal musculature.
- **Late school-age period/ early adolescence:** participation in school sports = CVS checkup.
- **Adolescence:** adolescents need a comprehensive health assessment to ensure that they progress through puberty without major problems. Other issues include: scoliosis (الانحراف الجانبي للعمود الفقري), obesity or trauma. Sexual maturity is another important issue in adolescents. All adolescents should be assessed to determine the sexual maturity rating.
- **Developmental milestones:** comparing patient's behavior with that of many normal children whose behaviors evolve in a uniform sequence within specific age ranges. (observation or parental report).
- **Psychosocial assessment:**
 - Bonding & attachment in infancy: bonding (feelings of the parents toward the newborn). Attachment (reciprocal feelings between parent & infant).
 - Developing autonomy in early childhood.
 - **School readiness:** readiness for preschool depends on autonomy and separation. Girls are usually ready earlier than boys. Pushing a child into an environment for which he/she is not prepared can contribute to school refusal, poor school achievement and behavioral problems.
 - **Adolescence:**

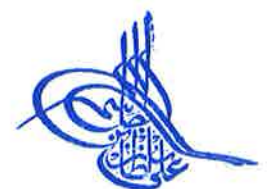
Early	1- Concern about body changes. 2- Peer group. 3- Independence.
Middle	1-Develop insight and reflect their own feelings. 2- Focus on identity. 3- High-risk behaviors.
Late	1- Thoughts about the future.

- **Modifying psychosocial behaviors:**

Positive reinforcement	Increasing the frequency of a behavior by following the behavior with a favorable event.
Negative reinforcement	Increasing the frequency of a behavior by following the behavior with removal of unpleasant event.
Extinction	Occurs when there is a decrease in the frequency of previously reinforced behavior because the reinforcement is withheld.
Punishment	Decreasing the frequency of a behavior through unpleasant consequences.

- **Treatment:**

Easy child	High adaptability, positive mood... etc
Difficult child	Poor adaptability, negative mood...etc
Slow to warm up child	Slow adaptability, somewhat negative mood, low activity level...etc.



CHAPTER 8: DISORDERS OF DEVELOPMENT

- Developmental surveillance and screening: parents often neglect to mention psychosocial problems because they think the physician is uninterested or cannot help.
 - **Development surveillance** (المراقبة والإشراف على تطور القدرات): done at every office visit. Comparing skill levels to lists of milestones.
 - **Developmental screening**: use of standardized screening test. Comparing child with a population of children.

General screening tests	Cover all behavioral domains
Targeted screening tests	Focus on one area of development

- The Denver Developmental Screening Test II is commonly used by general pediatricians. The Denver II assesses the development of children from birth to 6 yrs of age in four domains:
 - Gross motor.
 - Fine motor.
 - Language.
 - Personal-social.

Age	Gross motor	Fine motor	Personal-social	Language
6 months	Sits alone	Transfer objects from hand to hand	Feeds self	Babbles (التمتمة)
12 months	Walks, stand	Puts block in cup	Drinks from cup, imitates other (يقلد الآخرين)	Mama, Dada & 2 other words
18 months	Runs, kicks a ball	Stacks 4 blocks	Removes clothes, feeds doll	At least 6 words
2 yrs	Walks up & down stairs	Stacks 6 blocks, copies a line	Puts on clothes, washes hands and teeth	Puts 2 words together, know body parts and point pictures.
3-4 yrs	Jumps	Copies O, maybe +	Uses spoon, dresses without help.	3 word sentences, colors
5-6 yrs	Balances on each foot 6 sec	Copies square or triangle		Counts, defines words.

The pediatrician asks questions or directly observes behaviors. On the scoring sheet, a line is drawn at the child’s chronologic age. All tasks that are entirely to the left of the line that the child has not accomplished are considered delayed. Repeat screening at subsequent health maintenance visits often detects abnormalities that a single screen was unable to detect.

- **Autism screening** (للتوحد): recommended for children (18 months – 2 years). M-CHAT: 23 behaviors.
- **Language screening**: whenever there is a language delay, a hearing deficit must be considered.



- Other issues in assessing development and behavior: ignorance of environmental influences on child behavior may result in ineffective or inappropriate management (or both). Building a rapport with the parents and the child is a prerequisite for obtaining the often sensitive information that is essential for understanding a behavioral or developmental issue. Rapport usually can be established quickly if the parents sense that the clinician respects them and interested in listening to their concerns. The clinician develops rapport with the child by engaging the child in developmentally appropriate conversation or play, providing toys while interviewing the parents, and being sensitive to the fears the child may have. With adolescents, emphasis should be placed on building a physician-patient relationship that is distinct from the relationship with the parents. The interviewed issues must be taken into consideration-consent and confidentiality.



CHAPTER 21: FAILURE TO THRIVE

- Malnourished infants and young children who fail to meet expected standards of growth. It is diagnosed by weight that falls or remains below the third percentile for age. In the first few years of life, large fluctuations in percentile position can occur in normal children. Changes in weight should be assessed in relation to height & head circumference. In children with FTT, malnutrition initially results in wasting (deficiency in weight gain). Stunting (التفَرُّم) (deficiency in linear growth) generally occurs after months of malnutrition, and head circumference is spared except with chronic, severe malnutrition. FTT that is symmetric (weight, height and head circumference are proportional) suggests long-standing malnutrition.

- Diagnosis and clinical manifestations:

- Indicators of medical diseases, such as vomiting, diarrhea, fever, respiratory symptoms, and fatigue, should be noted. A careful diet history is essential to the evaluation. Lactation problems in breastfed infants and improper formula preparation are frequent causes of growth failure early in infancy.
- Physical finding related to malnutrition include: dermatitis, hepatomegaly, cheilosis and edema.
- Severely malnourished children are at risk for a variety of serious infections.

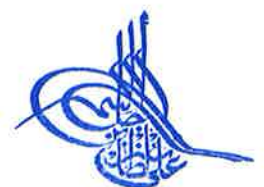
Marasmus	Kwashiorkor
Low weight/height	Normal weight/height
Emaciation (الهزال-الضوى-الضعف)	Edema (pitting, ascites)- hypoalbuminemia
Loss of subcutaneous fat	
Loss of muscle mass	
Apathy, lethargy, irritability	
Dry thin skin	Dermatitis (discoloration), change in hair texture, cheilosis.

- Treatment:

- Treatment must address the nutritional requirements of the child and the social issues of the family. Initial treatment should focus on the nutritional and management of the child while engaging the family in the treatment plan.
- Most children with FTT can be treated in the outpatient setting. Children with severe malnutrition, underlying diagnosis that require hospitalization for evaluation or treatment, or whose safety is in jeopardy because of maltreatment require hospitalization.
- Catch up growth may take 2 weeks. For children with chronic, severe malnutrition, many months are needed to reverse all trends in growth.

- Complications:

- Malnutrition-infection cycle: in which recurrent infections exacerbate malnutrition, which leads to greater susceptibility to infection. Children with FTT must be evaluated and treated promptly (فوراً) for infection and followed closely.



- During starvation, the body slows metabolic processes and growth to minimize the need for nutrients and uses its stores of glycogen, fat, and protein to maintain normal metabolic requirements.
- **Refeeding syndrome:** changes in serum electrolyte concentrations and the associated complications.

CHAPTER 27: diet of the normal infant:

- **Breastfeeding:**

- Human milk is ideal food for infants and it is the soul source of nutrition for the first 6 months of life. Human milk feeding decreases the incidence or severity of diarrhea and infections. Also, it contains antibodies (secretory IgA). Outstanding characteristics include the relatively low but highly bioavailable protein content; a generous quantity of fatty acids. Breast milk doesn't need to be warmed, doesn't require a clean water supply, and is generally free of microorganisms.
- **Exclusive breastfeeding:**
 - # Colostrum (اللبأ) a high-protein, low-fat fluid, is produced in small amounts during the first few postpartum days. It has some nutritional value but primarily has important immunologic and maturational properties.
 - # Primiparous women often experience breast engorgement before the milk comes in around the third postpartum day; the breasts become hard and are painful, the nipples become nonprotractile, and the mother's temperature may increase slightly.
 - # The mean feeding frequency during the early weeks postpartum is 8 to 12 times per day.
 - # The characteristics of the stools of breastfed infants may alarm parents. Stool must be unformed, yellow, and seedy in appearance.
- **Common breastfeeding problems:**
 - # Breast tenderness, engorgement (alleviated by cold or hot compresses – hand pumping of some milk), and cracked nipples are the most common problems encountered by breastfeeding mothers.

- **Complementary foods and weaning (القطام):**

- By 6 months, complementary feeding of semisolid foods is suggested.
- Commercially prepared or homemade foods help meet the nutritional needs of the infant. Because infant foods are usually less energy dense than human milk and formula, they generally should not be used in young infants to compensate for inadequate intake from breastfeeding or formula.

CHAPTER 28: DIET OF THE NORMAL CHILD AND ADOLESCENT

- **Nutrition issues for toddlers (1-<5 yrs) and older children:**

- Cow's milk not introduced before 1 year to avoid iron-deficiency anemia.
- Excessive milk intake should be avoided in toddlers because larger intakes may reduce the intake of a good variety of nutritionally important solid food. Large intakes may also contribute to excessive caloric intake.



- By 1 year of age, infants should be eating meals with the family, have a regular schedule of meals and snacks (3 meals+2 snacks), and be encouraged to self-feed with appropriate finger foods.
- Learning healthy eating behaviors at an early age is an important preventive measure because of the association of diet with several chronic adult diseases, such as obesity, diabetes, and cardiovascular diseases.

Nutrition issues for adolescents:

- Adolescent can be a time when poor eating habits develop. Skipped meals (especially breakfast), binge eating (الأكل بشراهة), dieting, consumption of junk food are common problems.
- Osteoporosis caused by poor dietary calcium or vitamin intake or poor absorption of ingested calcium in children and adolescents is becoming more clinically recognized and treated.

