



# **SNS COLLEGE OF NURSING**

**SARAVANAMPATTI, COIMBATORE-35**

## **DEPARTMENT OF CHILD HEALTH NURSING**

**COURSE NAME : BSC (NURSING) III  
YEAR**

**SUBJECT : PEDIATRICS**

**UNIT II: THE HEALTHY CHILD**

**TOPIC : GROWTH & DEVELOPMENT**

# INTRODUCTION



# FACTORS INFLUENCING GROWTH AND DEVELOPMENT

**1. Heredity** is the transmission of physical characteristics from parents to children through their genes.

- It influences- physical appearance such as height, weight, body structure, the colour of the eye, the texture of the hair, and even intelligence and aptitudes.



**2. Environment** involves the physical surroundings and geographical conditions of the place the child lives in, as well his social environment and relationships with family and



- Well-nurtured child does better than a deprived one; the environment children are constantly immersed in contributes to this.

# FACTORS INFLUENCING GROWTH AND DEVELOPMENT

**3. Sex:** It affects the physical growth and development of a child.

- Boys and girls grow in different ways, especially nearing puberty.
- Boys tend to be taller and physically stronger than girls.



**4. Exercise and Health:** Children deliberately engaging in [physical activities](#) knowing it would help them grow.

- Exercise here refers to the normal play time and [sports activities](#) which help the body gain an increase in muscular strength and put on bone mass





**5. Hormones:** Their timely functioning is critical for normal physical growth and development in children.



- Imbalances in the functioning of hormone-secreting glands can result in growth defects, obesity, behavioral problems and other diseases.

# FACTORS INFLUENCING GROWTH AND DEVELOPMENT

**6. Nutrition:** It's a critical factor in growth as everything the body needs to build and repair itself comes from the food we eat.



- [Malnutrition](#) can cause deficiency diseases that adversely affect the growth and development of children



**7. Familial Influence:** Whether they are raised by their parents, grandparents or foster care, they need basic love, care and courtesy to develop as healthy functional individuals.



- The most positive growth is seen when families invest time, energy and love with child through activities, like reading, playing with them and having deep meaningful conversations



# FACTORS INFLUENCING GROWTH AND DEVELOPMENT



**8. Socio-Economic Status:** Children from poorer families may not have access to educational resources and good nutrition to reach their full potential.

# FACTORS INFLUENCING GROWTH AND DEVELOPMENT

**9. Maternal nutritional deficiencies:** Mal positions, metabolic, endocrine disturbances.

- Infectious diseases (or diseases like rubella, toxoplasmosis, syphilis, herpes)
- Rh incompatibility, smoking, alcohol and intake of certain drugs.



# FACTORS INFLUENCING GROWTH AND DEVELOPMENT

## 10. Genetic factors:

Actual outcome of growth = genetic potential+ environmental influences.

Mutations- inherited by offspring Genetic studies make use of twin and family data





# ASSESSMENT OF GROWTH AND DEVELOPMENT

## Assessment of growth:

- Assessment of physical growth can be done by anthropometric measurement and the study of velocity of physical growth.
- Measurement of different growth parameters is the importance nursing responsibility in child care.



# ASSESSMENT OF WEIGHT



- Weight is one of the best criteria for assessment of growth and a good indicator of health nutritional status of child.
- Among Indian children, weight of the full terms neonate at birth is approximately 2.5kg to 3.5 kg.
- There is about 10% loss weight first week of life, which regains by 10 days of age.



# ASSESSMENT OF WEIGHT





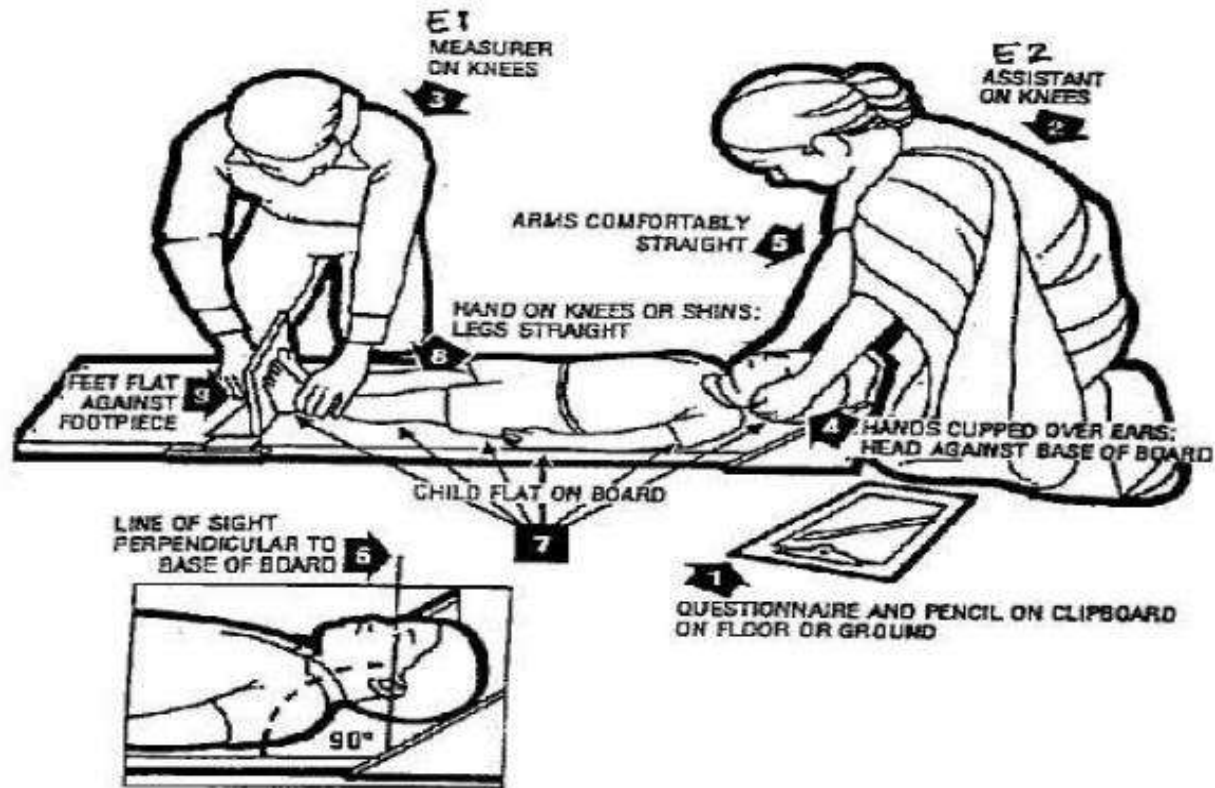
# ASSESSMENT OF HEIGHT

- Increase in height indicates skeletal growth. Yearly increments in height gradually diminished from birth to maturity.
- At birth average length of a healthy Indian newborn baby is 50 cm.
- It increases to 60cm at 3 months, 70 cm of a 9 month and 75 cm at 1 year of age.
- Then weight gain is about 25-30 gm per day for 1<sup>st</sup> 3 month and 400gm/month till one year of age.

# ASSESSMENT OF HEIGHT



# ASSESSMENT OF HEIGHT





# ASSESSMENT



- The infants double weight gain their birth weight by 5 month of age, trebled by 1 year, 4<sup>th</sup> time by 2 years, five times by 3 year, 6 times by 7 year and ten times by ten year.
- Then weight increases rapidly during puberty followed by weight increases to adult size.
- In 2<sup>nd</sup> year, there is 12cm increase, 3<sup>rd</sup> year it is 9 cm, 4<sup>th</sup> year it is 7cm, and in 5<sup>th</sup> year is 6cm.
- So the child double the birth by 4 to 4.5 years of the age after wards there is about 5cm increase in every year till onset of puberty.



# GROWTH AND DEVELOPMENT



- It is an important criteria which helps to assess the normal growth or its deviations.

$$\text{BMI} = \text{kg/m}^2$$

- BMI remains constant up to the age of 5 Years. If the BMI more than  $\text{kg/m}^2$ , it indicates obesity and if it is less than  $15 \text{ kg/m}^2$  it indicates malnutrition.





# ASSESSMENT OF BMI



- Underweight =  $\leq 18.5$
- Normal weight =  $18.5 - 24.9$
- Over weight =  $25 - 29.9$
- Obesity = BMI of 30 or greater

# ASSESSMENT OF HEAD CIRCUMFERENCE

- It is related to brain growth and development of intracranial volume. Average head circumference measured about 35cm at birth.
- At 3 months it is about 40cm, at 6 month 43cm, at 1 year 45cm, at 2 years 48cm, at 7 year 50cm and at 12 years of age it is about 52cm, almost same a adult.





# ASSESSMENT OF HEAD CIRCUMFERENCE

## REFERENCES

Wong's Essential of Pediatric Nursing, 10th edition; Elsevier publication.

Principles of Pediatric Nursing; "caring for children" ;author, Jane Ball et all., sixth edition.

Text book of Pediatric Nursing; author, Dorothy R Marlow; 6th edition

Lippincott, Pediatric Nursing; 5th edition.

<https://www.ncbi.nlm.nih.gov/pmc/artices/PMC 5006399>