

## **Growth and Development of Children**

### **Growth:**

Growth is increase in physical size of the whole or any of its parts. It results from increase in number of cells of different organs. It can be measured by centimeters or kilogram, assessed by weight and height, head circumference and skin fold thickness

### **Development:**

Progressive increase in skills and capacity of function and it involves qualitative changes. It can be measured through observation.

### **Types of growth and development**

#### **A. Growth :**

1. **Physical growth:** Can be assessing through head size, measurement of head circumference, thoracic diameter, weight, and height and arm circumference.
2. **Physiological growth:** This can be assessing through measurement of ( vital signs ) temperature, pulse, respiration and blood pressure

#### **B. Development:**

1. **Motor development:** e.g. sitting, standing, running, usage of fine muscles
2. **Intellectual development** e.g. Problem solving, reasoning, mental (Cognitive)
3. **Social development:** e.g. raising and training a child in the culture, self concept, friendship
4. **Emotional development** e.g. Love, fear

### **Principles of growth and development**

- 1- Growth and development are continuous processes
- 2- Each stage of growth and development are depends upon the proceeding one.

- 3- Each child has his own growth patterns, which vary within the child but within the normal rate.
- 4- All children go through a normal sequence of growth, but not in the same rate, i.e. (individual differences) are noticed.
- 5- Growth and development have predictable sequences, as all human beings go through the same stages on their way for physical growth and or development
- 6- Not all body parts grow in the same rate at the same time,e.g. during prenatal stage, head grow faster than the other organs, but after birth, the other organs are more rapid in growth than the head.
- 7- Although growth and development go through a fixed and precise order, they don't progress at the same rate. There are period of rapid growth and other period of slow growth.
- 8- Growth and development proceed in regular, related directions, which reflect the physical development and maturation of neuromuscular functions. These directions are pattern of growth and development.

### **Patterns of growth and development**

**a- Cephalocaudal:** Growth proceeds from head down to toes.

**b- Proximodistal (Proximal to distal):** Growth proceeds from center of the body to the periphery e.g. stand; sit before the usage of fine muscles of hands.

**c- General to specific:** Development proceeds from simple to complex function and activities

### **Factors affecting growth and development**

#### **1. Hereditary or Genetic factors:**

**Genetic** predisposition is the importance factors which influence the growth and development.

## **2. Factors related to mothers:**

- **Mothers' age:** teenage mothers are more likely than those of older mothers to have premature children .mothers who are over 40 years are more likely than others to have infant Down syndrome.
- **Nutritional deficiencies:** e.g. malnutrition.
- **Diabetic mother.**
- **Exposure to radiation which causes gene mutations**
- **Smoking.**
- **Infection** with German measles during the first trimester of pregnancy can cause fetal congenital anomalies.
- Use of drugs.

## **3- Factors related to fetus:**

- Mal-position in utero.
- Faulty placental implantation, which interferes with blood supply to fetus thus affecting the nutrients it needs.

## **4- External environmental factor:**

- **Socio-economic status of the family** (e.g., low –socio-economic families).
- **Child's nutrition** as malnutrition.
- **Child's health problems:** congenital conditions.
- **Exercise:** it promotes the circulation, physiologic activity and stimulates muscular development.
- **Mass media:** they might have a positive or negative effect on children's behavioral development.

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

- Knowing what to expect of a particular child at any given age.
- 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**

### **1. Prenatal period: from conception to birth**

- Germinal: conception to approximately two weeks
- Embryonic: 2 to 8 weeks
- Fetal: 8 to 40 weeks (birth)

### **2. Neonatal stage: from birth to 1 month**

### **3. Infancy stage: from 1 month to 12 months**

### **4. Toddler stage 1 to 3 years**

### **5. Preschool stage: 3 to less than 6 years.**

### **6. School stage: from 6 to less than 12 years**

### **7. Adolescence stage: from 12 to approximately 18 years**