1. **Growth**

* Growth refers to an increase in physical size of the whole body or any of its parts.
* It is a quantitative change in the child’s body.
* It can be measured in Kg, pounds, meters, inches, ….. etc

Principle of growth and development

1. **Development**

* Development refers to a progressive increase in skill and capacity of function.
* It is a qualitative change in the child’s functioning.
* It can be measured through observation.

1. **Maturation**

Increase in child’s competence and adaptability. It is describing the qualitative change in a structure. The level of maturation depends on child’s heredity. **"the process of being mature"**

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

* Knowing what to expect of a particular child at any given age.
* Early detection of deviation in child’s pattern of development
* 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.

**Types of growth and development**

Types of growth:

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

- Physiological growth (vital signs …)

Types of development:

- Cognitive development

thought processes and intellectual abilities including attention, memory, problem solving, imagination, creativity, academic and everyday knowledge, and language

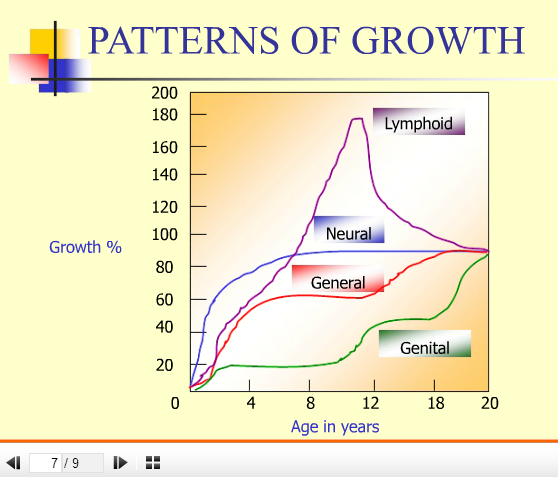
* Motor skills
* Social development

self-knowledge (self-esteem, sexual identity, ethnic identity), moral reasoning, understanding and expression of emotions, self-regulation, temperament, understanding others, interpersonal skills, and friendships

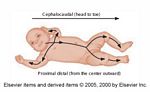
- Emotional development

feelings, impulses, physiological responses and reactions (internal & external)

* **Continuous** process As a child develops, he or she adds to the skills already acquired and the new skills become the basis for further achievement and mastery of skills .Predictable Sequence The infant lifts and turns the head before he or she can turn over
* **Predictable Sequence :**child creep-crawl-sit –stand –walk –run then jump
* **Development** depends on maturation and learning. Maturation refers to the sequential characteristic of biological growth and development. The biological changes occur in sequential order and give children new abilities.
* **Don’t** progress at the same rate (↑ periods of GR in early childhood and adolescents & ↓ periods of GR in middle childhood): Some children will walk at ten months while others walk a few months older at eighteen months of age. Some children are more active while others are more passive.
* **Not** all body parts grow in the same rate at the same time.

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* **Each** child grows in his/her own unique way.
* **Each** stage of G&D is affected by the preceding types of development.
* **Cephalo-caudal**(head down to toes) : Development proceeds from the head downward According to this principle, the child gains control of the head first, then the arms, and then the legs.
* **Proximodistal** (center of the body to the peripheral) : Development proceeds from the center of the body outward The child’s arms develop before the hands and the hands and feet develop before the fingers and toes.



* **General** to specific : In motor development, the infant will be able to grasp object with the whole hand before using only the thumb and forefinger . Growth occurs from large muscle movements to more refined (smaller) muscle movements. an
* **Simple** to complex : Development depends on maturation and learning. Maturation refers to the sequential characteristic of biological growth and development. The biological changes occur in sequential order and give children new abilities.
* **Development** proceed until death while growth stop in specific period

**Methods to Evaluate Growth and development**

**Growth Chart**

**growth charts, graphic** displays of normal progressive changes in height, weight, and head circumference. They consider the range of growth as expressed in percentiles, or as standard deviation from the mean for average height or weight for age. Head circumference measurements are common from birth to 2 years of age.

**Uses of growth chart**

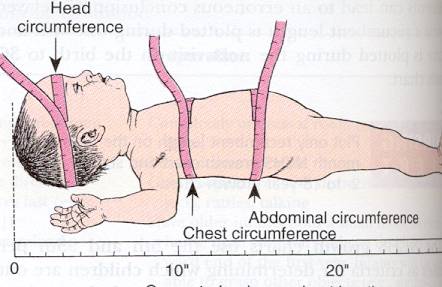
* Growth monitoring
* Diagnostic tool
* Planning and policy making
* Educational tool
* Tool for action
* Evaluation
* Tool for teaching

**Note 1 :**under 2 years child measure length by supine position while child above 2 years measure by standing position

|  |  |
| --- | --- |
| https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcRDVEDJ4H2Fu3OJwkfcG9y6ftwrlssq_DjRaib48ggbUPK3RVYI | how to measure children's height |

**Note 2:** head and chest also very important in growth measurement should be measure under 2 years.

Head circumference is measured by wrapping the paper tape over the eyebrows and the around the occipital prominence



**Note 3:**common tool to assess development is **Denver Developmental Screening Test – 2**

* Very commonly used screening tool
* Birth to 6 years old
* 10-20 minutes to administer
* Four Domains: fine and gross motor, language, and social skills
* Social/personal: aspects of socialization inside and outside the home, e.g. smiling
* Fine motor function: eye/hand co-ordination, and manipulation of small objects, e.g. grasping and drawing
* Language: production of sounds, ability to recognize, understand, and use of language, e.g. ability to combine words
* Gross motor functions: motor control, sitting, walking, jumping, and other movements

**General health promotion strategies for children**

* Reduce child morbidity and mortality
* Control of communicable diseases
* Increase mothers awareness about the advantage of breast feeding
* Increase awareness about injuries during childhood
* Increase awareness about sexually transmitted infections
* Promote immunization program for all children
* Promote child nutrition

**Stages of Growth and Development**

* Prenatal
  + Germinal (conception- 2 w)
  + Embryonic (2w- 8 w)
  + Fetal stage (8-40 or 42 w)
* Infancy
  + - Neonate :Birth to end of 1 month
    - Infancy :1 month to end of 1 year
* Early Childhood
  + - Toddler :1-3 years
    - Preschool :3-6 years
* Middle Childhood
  + School age : 6 to 12 years
* Late Childhood
  + Adolescent : 13 years to approximately 18 years