

GROWTH AND DEVELOPMENT

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GROWTH

- -Net increase in size and mass of tissue
- -multiplication of cell and increase in intracellular substance

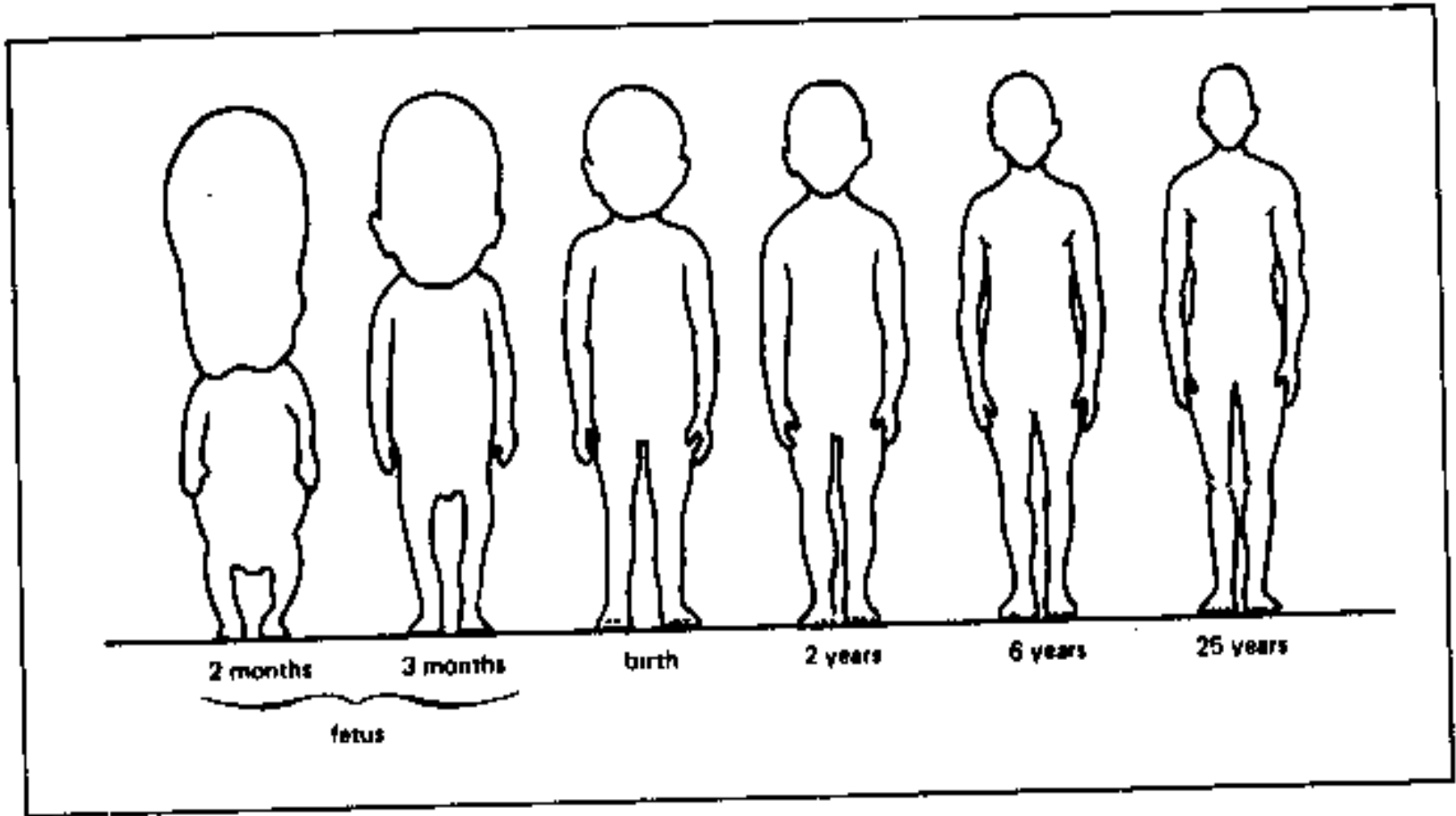


Figure 9. Changes in bodily proportions with age

Factors affecting growth

FETAL FACTORS:

- **Genetic potential**
- **Sex**
- **Fetal hormones**
- **Fetal growth factor**
- **Placental factor**
- **Maternal factors**

POSTNATAL FACTORS:

- **Genetic factors**
- **IUGR**
- **Harmonal influence**
- **Sex**
- **Nutrition**
- **Infection**
- **Chemical agent**
- **Trauma**

Factors affecting growth

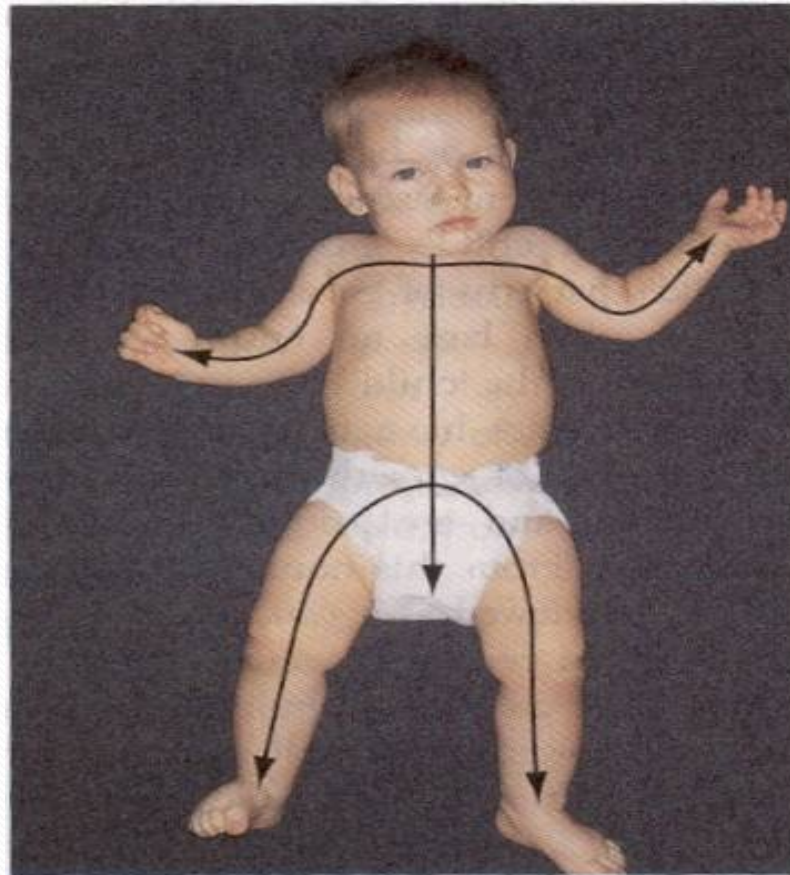
SOCIAL FACTORS:

- Socioeconomic factors
- Poverty
- Natural resources
- Climate
- Emotional factors
- Cultural factors
- Parental education

LAWS OF GROWTH

- ❖ CONTINUOUS AND ORDERLY PROCESS
- ❖ GROWTH PATTERN OF EVERY INDIVIDUAL IS UNIQUE
- ❖ DIFFERENT TISSUE GROW AT DIFFERENT RATES
 - 1.brain growth
 - 2.growth of gonads
 - 3.lymphoid growth
 - 4.growth of body fat and muscle mass.

Growth Pattern



Periods of growth

Prenatal period:

- ovum: 0-14 days
- embryo: 14 days to 9 wks
- fetus: 9wks to birth

Perinatal period:

- 22 wks of gestation to 7 days
after birth

Postnatal period:

- neonate- early: birth to 7 days
 - late: 7 days to 28 days
- infancy: upto first year of life
- toddler: 1-3 yr
- preschool: 3-6 yr
- school age child: 6-12 yr

Adolscence:

- early: 10-13 yrs
- middle: 14-16 yrs
- late; 17-20 yrs

Assessment of physical growth

1. Weight
2. Length/height
3. Head circumference
4. Chest circumference
5. Mid arm circumference

development

- ❖ Maturation of function and acquisition of various skill for optimal functioning of an individual.
- ❖ the maturation and myelination of nervous system is reflected in the sequential attainment of developmental milestone.

Rules of development

- Continuous process
- Depends upon the functional maturation of nervous system
- The sequence of attainment of the milestone is the same in all children
- The process of development progresses in cephalocaudal direction
- Certain primitive reflexes have to be lost before relevant developmental milestones are attained
- The initial disorganised mass activity is replaced by specific and wilful action

Factors affecting development

PRENATAL FACTORS: - Genetic factors

- maternal factors

1. maternal nutrition

2. exposure to drug and toxins

3. maternal disease and

infection

NEONATAL RISK FACTORS: - Intrauterine growth
retardation

- prematurity

- perinatal asphyxia

POSTNEONATAL FACTORS:

malnutrition

- Infant and child
- Iron deficiency
- Iodine deficiency
- Infectious disease
- Environmental toxins
- acquired insult to

brain

PSYCHOSOCIAL FACTORS: - Parenting

- Poverty

- Lack of

stimulation

- Violence and

abuse

- Maternal

depression

-

Institutionalisation

PROTECTIVE FACTORS: - Breast feeding

- Maternal education

Domains of development

1. Gross motor development
2. Fine motor skill development
3. Personal and social development and general understanding
4. Language
5. Vision and Hearing

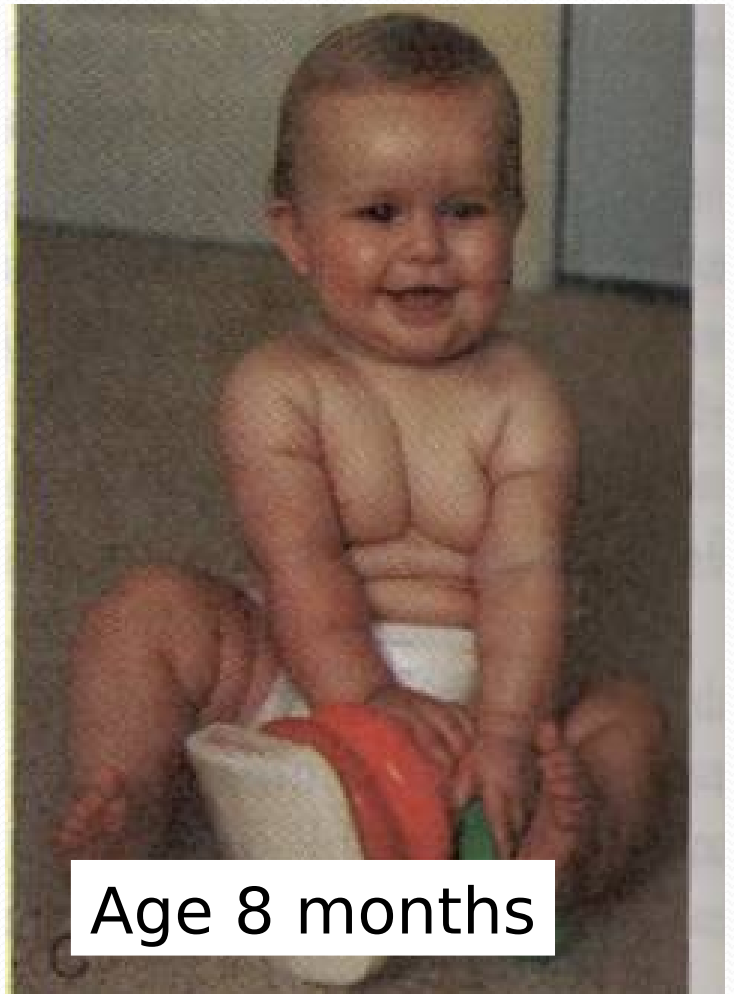
Gross motor development

- Orderly sequence to ultimate attainment of locomotion
 1. Supine and pull to sit
 2. Ventral suspension
 3. Prone position
 4. Sitting
 5. Standing and walking

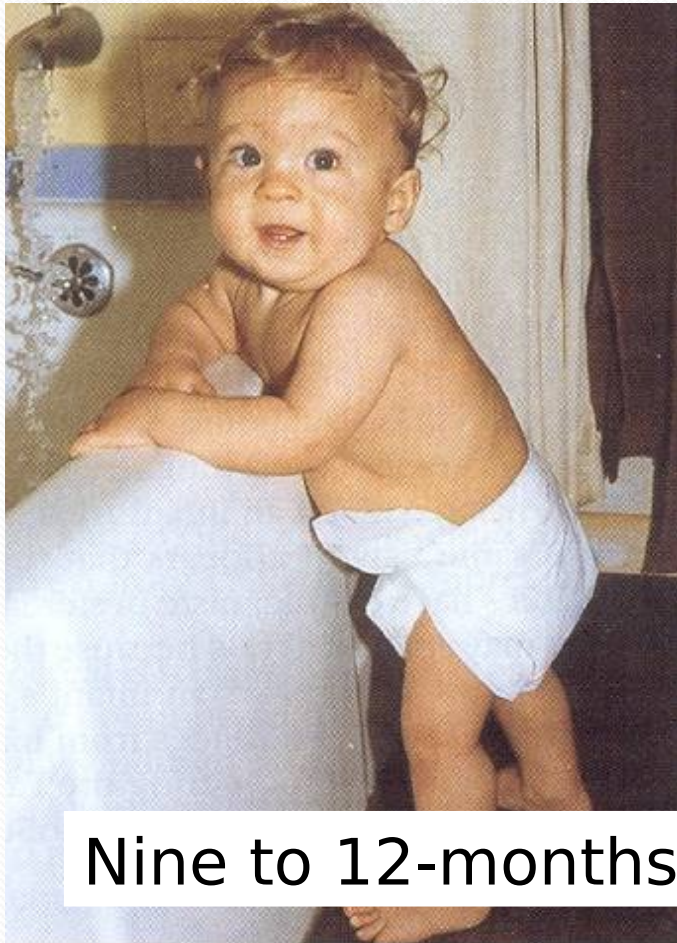
Fine motor development

- Development of fine manipulation skill and coordination
 1. Hand - eye coordination
 2. Hand mouth coordination
 3. Advanced hand skills
 4. dressing

Sitting Up



Ambulation



GROSS MOTOR DEVELOPMENT

- **Supine and pull to sit.**

- newborn

- 6 weeks

- 12 weeks

- 20 weeks

- 5 months

- **Ventral suspension-**

- 4 weeks

- 6 weeks

- 8 weeks

- 12 weeks



- **Prone position**

- at birth

- 2 weeks

- 4 weeks

- 6 weeks

- 8 weeks

- 12 weeks

- 6 months

- 4 to 6 months

- 8 months

- 10 months



- **Sitting-**

- 5 months

- 6 to 7 months

- 8 months

- 10 to 11 months



- **Standing and walking-**

- 6 months

- 9 months

- 10 to 11 months

- 12 to 13 months

- 13 to 15 months

- 18 months

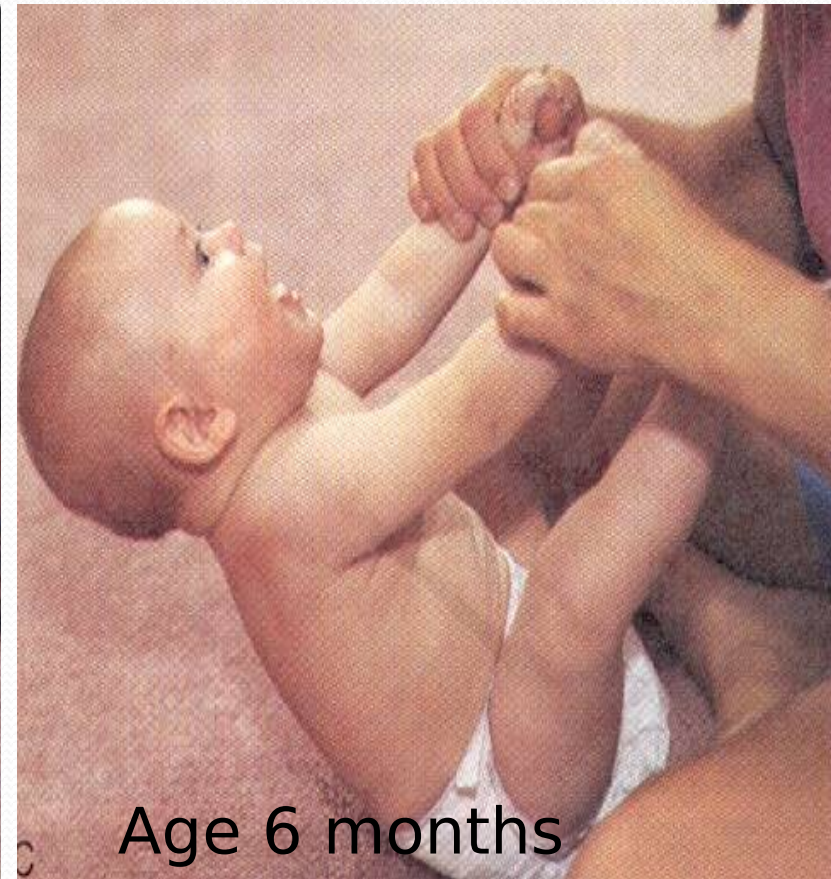
- 2 years

- 3 years

- 4 years

- 5 years

Head Control



Fine Motor Development in infancy



6-month-old



12-month-old

FINE MOTOR DEVELOPMENT

- **Hand eye co-ordination**

- 12 to 20 weeks

- 3 to 4 months

- 6 months

- 6 to 7 months

- 8 to 9 months

- 1 year

- 9 to 10 months

- **Hand mouth co-ordination**

- 6 months

- 1 year

- 15 months

- 18 months



- **Advanced hand skills**

- 15 months

- 18 months

- 2 years

- 3 years

- 4 years

- 5 years

- **Dressing**

- 1 year

- 18 months

- 2 years

- 3 years

- 5 years

Social development



PERSONAL AND SOCIAL DEVELOPMENT AND GENERAL UNDERSTANDING

- 1 month
- 2 months
- 3 months
- 6 months
- 6 to 7 months
- 9 months
- 1 year



-15 months

-18 months

-2 years

-3 years

-4 years

-5 years

Pre-School



School-Age



LANGUAGE

-6 TO 8 WEEKS

-3 TO 4 MONTHS

-6 MONTHS

-9 MONTHS

-9 TO 10 MONTHS

-1 YEAR

-2 YEARS

-3 YEARS

-4 YEARS

-5 YEARS

Vision in toddler age



VISION AND HEARING

- **Vision**

- at birth

- 1 month

- 3 to 4 months

- 6 months

- 1 year



- **Hearing-**

- newborn

- 3 to 4 months

- 5 to 6 months

- 7 months

- 10 months



THANK YOU