

## **SUMMARY**

You must have noticed that a new-born cannot sit without support. But an infant four months old can sit with support for a minute. By nine months, most infants can sit without support for 10 minutes or longer. Similarly, in toddlers or children between one to three years, there is a marked transition in terms of a child's growth and developmental milestones. Now question arises do children of a similar age group go through similar changes? Can we identify any predictable patterns in the growth and development of children? What are the factors that affect the growth and development of children? In this lesson; you learnt the answers to these questions about growth and development of children.

### **GROWTH**

- Refers to quantitative changes in the body.
- The main indicators of growth are increase in height, weight and changes in the body structure and body proportions.
- Changes are visible, apparent and measurable.
- Rapid during the first two years of life. After the first two years of life, growth curve begins to level off and the rate of growth slows down until puberty. Puberty is marked by a growth spurt.
- Growth charts that monitor growth should be maintained regularly for all children.
- Pattern of growth remains the same for both boys and girls, but on an average, baby girls are slightly smaller than baby boys in size.

### **DEVELOPMENT**

- Refers to qualitative changes in the body as well as changes in behaviour and attitude.
- Difficult to measure or quantify development as these changes are not quantitative
- Certain changes such as cognitive and socio-emotional maturity may not be measured in quantitative terms. These need to be measured in qualitative terms.

## **FACTORS AFFECTING GROWTH AND DEVELOPMENT**

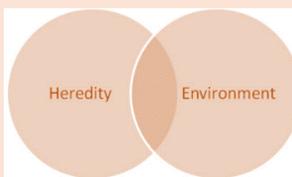
It is important to note that there are individual differences in development. One child may start speaking early and the other might take more time to speak. Although the sequence of development is fairly uniform, predetermined and common to all children, the rate and pace of development may vary from child to child. The range of variability depends on many factors like heredity and environment. Factors that affect the growth and development of children are as follows:

## HEREDITY

- ✓ Inherited characteristics depend on the genetic material a child receives at the time of conception from both the parents through genes, which are structural units of chromosomes.
- ✓ Heredity or genetics is found to influence the development of a children's intellectual potential, height, weight and general physical appearance, susceptibility to certain diseases (such as colour blindness, down's syndrome, asthma, diabetes), certain personality traits etc.
- ✓ At the time of conception, every child receives 46 chromosomes, arranged as 23 pairs (called autosomes) with one member of each pair inherited from each parent, 23 contributed by the mother and 23, by the father. 22 autosomes are the same in male and female. In addition, the chromosome passed on by the father will determine the sex of the child.
- ✓ After conception, nothing can be done to add to or subtract from the child's hereditary endowment.

## ENVIRONMENTAL

- ✓ **Nutrition, Health and Hygiene of Child and Mother:** Along with mother's and child's nutrition and health, keeping them clean by giving them a regular bath, cleaning of teeth, hair, nails, nose and eyes are important factors that must be given attention.
- ✓ **Age of the Mother:** Besides the mother's health, her age also affects foetal development. Mothers who are less than seventeen years of age and after the age of 35 may lead to complications. Women over the age of 40 run a risk of having children with chromosomal abnormality.
- ✓ **Emotional State of Mother:** Prolonged emotional stress during pregnancy may have lasting consequences on the child. Emotions like rage, fear, sadness and anxiety may manifest difficulties such as premature or low birth weights, gas, sleep disturbances and excessive crying.
- ✓ **Exposure to X-rays:** may have harmful effects on the physical and mental development of the foetus
- ✓ **Drugs:** Antibiotics, Hormones and Steroids drugs are suspected of producing birth defects if they are taken during pregnancy
- ✓ **Drinking and Smoking:** by a pregnant woman retards the growth of the foetus and lowers the new-born's birth weight and resistance to illness. It also increases the chances of spontaneous abortion and premature birth, and may affect long-term physical and cognitive development.
- ✓ **Environmental Pollution:** can seriously affect the developing foetus. Environmental pollution linked to prematurity, low birth weight, brain damage, slightly poor mental development and variety of physical defects.



### Interrelationship of Hereditary and Environment Factors

However, genetic pre-dispositions can be over ridden by environmental influences. One can create or provide an environment that can help reduce the impact of heredity.

## OTHER CONTEXTUAL

- ✓ **Socio-Economic Background:** Children from different socio-economic backgrounds may vary in terms of their growth and development.
- ✓ **Unhygienic Living Conditions:** make children susceptible to variety of diseases like diarrhoea, typhoid measles, chicken pox, whooping cough, diphtheria and many other ailments of the stomach, leaving them with stunted growth and development.
- ✓ **Illness and Accidents:** due to lack of safety measures and negligence may lead to physical and intellectual impairments
- ✓ **Family structure:** has an impact on their development including their socio- emotional development.
- ✓ **Child-Rearing Practices:** may have positive or negative impact on the children's development. A balanced attitude of parents towards children helps to become confident and have high self-esteem.
- ✓ **Enabling and Stimulating Environment:** at home and school promotes healthy development of all domains.
- ✓ **Influence of Siblings:** Apart from parents, children are strongly influenced by their siblings which can be a source of emotional security.
- ✓ **Peer Group:** In the company of friends that children learn sharing, cooperation, autonomy, skills of leadership and a sense of competition.the importance of peer group in healthy growth and development cannot be undermined.
- ✓ **Gender:** Differences in behaviour shown by boys and girls emerge because of parental and societal expectations.
- ✓ **Culture:** cultural practices also directly and indirectly influence children's growth and development

## PRINCIPLES OF DEVELOPMENT

<b>Development is continuous and involves change</b>	<ul style="list-style-type: none"> <li>○ Development involves changes at each step and continues to take place all the time.</li> <li>○ Behavioural pattern, which are indicators of development take place continuously</li> <li>○ Changes appear not only in physical features and body structure but also in the socio-emotional and cognitive development of children.</li> </ul>
<b>Development is sequential</b>	<ul style="list-style-type: none"> <li>○ Development is sequential.</li> <li>○ All children follow more or less similar developmental patterns with one stage leading to the other.</li> </ul> <div style="text-align: center; margin-top: 10px;"> <p><b>Pattern of development proceeds in two directions</b></p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="background-color: #d9e1f2; padding: 5px; border: 1px solid #000; text-align: center;"> <p><b>CEPHALOCAUDAL</b> Head to Toe</p> </div> <div style="background-color: #d9e1f2; padding: 5px; border: 1px solid #000; text-align: center;"> <p><b>PROXIMODISTAL</b> Near to Far</p> </div> </div> </div>

<p><b>Development is a product of maturation and learning</b></p>	<ul style="list-style-type: none"> <li>○ Children perform the particular tasks only when they get physically and mentally mature.</li> <li>○ Maturation is the unfolding of characteristics potentially present in the individual which comes from genetic endowment.</li> <li>○ Learning brings change in behaviour due to environmental learning which includes effort and exercise.</li> <li>○ Maturation and learning are closely related, one influences the other</li> <li>○ Children develop as per their internal genetic time table as well as external environmental inputs.</li> </ul>
<p><b>There are individual differences in Development</b></p>	<ul style="list-style-type: none"> <li>○ At each stage of development, one can expect certain competencies to appear in every domain of development called developmental milestones.</li> <li>○ There are individual differences in development as no two children are alike.</li> <li>○ The range of variability depends on many factors like heredity and environment</li> <li>○ Developmental differences are routine among children unless a child deviates drastically from the normal developmental pattern.</li> </ul>
<p><b>The child develops as a unified whole</b></p>	<ul style="list-style-type: none"> <li>○ Different domains of development are interrelated and therefore the child develops as a unified whole.</li> <li>○ Each domain of development affects the other and is, in turn, affected by the other domains.</li> <li>○ The impact may be minor and temporary, or serious and permanent.</li> </ul>

### EVALUATE YOURSELF

**Q1.** Development is governed by certain principles. Describe those principles of development.

**Q2.** Explain different factors that can affect the child.

### PRACTICE YOUR KNOWLEDGE

Observe six children between the age group of 1 to 3 years (with parent's consent) in your surroundings and make a report on how they are different from each other with reference to growth and development. Also, discuss probable factors responsible for their differences.