

**4.1 Introduction : Concept of Human Development****4.2 Characteristics of Development****4.3 Growth, Maturation and Development****4.4 Developmental Stages**

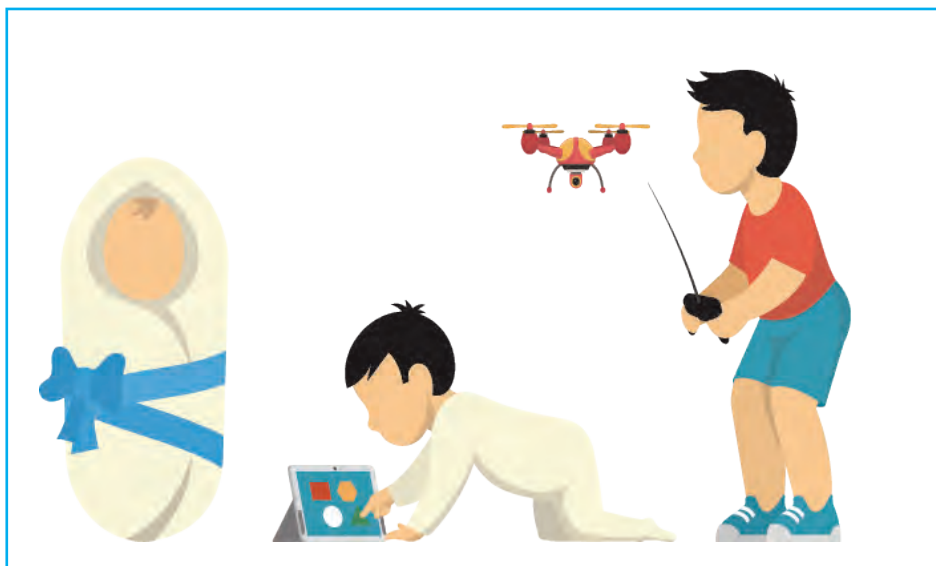
## 4.4.1 Prenatal Stages

## 4.4.2 Postnatal Stages

**Learning objectives**

This chapter aims at facilitating students to

1. know what is human development.
2. understand human development and other parallel concepts.
3. understand the stages of human development with specific characteristics, problems and developmental tasks at each of them.
4. relate the principles of development in day to day life.

**4.1 Introduction : Concept of Human Development**

In this chapter, we shall discuss the definition, characteristics of development and parallel concepts.

The term ‘Human Development’ means a progressive series of changes that occur as a result of maturation and experience.

Human life proceeds in stages. The life of the individual is real and significant just as the geographical age of the earth or the revolutionary stages of life. Each stage is distinguished by a dominant feature, a leading characteristic which gives the period its coherence, its unity and its uniqueness.

## 4.2 Characteristics of Development

### 1. Development follows a specific pattern :

Every species follows a specific pattern and sequence of development. Specific pattern follows in prenatal and postnatal development of human being. e.g. all babies learn to turn over, crawl, stand and then walk. They may skip a particular stage, but the order or pattern will remain the same. Specific pattern follows in behavioural development also. For example, in language development child first makes some sounds, then babbles and starts speaking some words and sentences. Sexual development starts at a specific age. There is certain pattern to the development.

### 2. Development takes place in specific direction :

Development takes place during prenatal and postnatal stage. There are two principles of development.

#### (1) Cephalocaudal principle of development :

Development proceeds from the head to toe. This is called the Cephalocaudal principle. This principle describes the direction of growth and development. According to this principle, the child gains control of the head first, then the arms and then the legs. Infants develop control of the head and face movements within first two months after birth.

#### (2) Proximodistal principle of development :

Development proceeds from the centre of the body to outward. This is the principle of

Proximodistal development also describes the direction of development. This means that the spinal cord develops before outer parts of the body. The child's arms develop before the hands and the hands and feet develop before the fingers and toes.

### 3. Development is continuous :

One stage of development lays the foundation for the next stage of development. There are various stages of human life span that is prenatal, infancy, early childhood, late childhood and adolescence, early youth, adulthood and old age. But the rate of development is not same for all stages.

### 4. Development proceeds from general to specific :

The infant's first motor movements are very generalized, like reflexes and non-directional waving arms or kicking before being able to reach or crawl towards an object. Child uses his full hand before developing finger dexterity.

### 5. There are individual differences in development :

Although the patterns and sequences for growth and development are usually the same for all children, the rate at which every individual reaches that stage is different. Some individuals attain a particular stage very early where as some of them mature late.

### 6. The rate of development is different for different body part :

Child first develops control over his neck, then raises his head resting on chest, then sits, crawls and finally starts walking.

**Table No. 1****An Overview of Growth, Development, Maturation**

<b>Concept</b>	<b>Growth</b>	<b>Development</b>	<b>Maturation</b>
	<ul style="list-style-type: none"> <li>• It is quantitative change</li> </ul>	<ul style="list-style-type: none"> <li>• It is qualitative change</li> </ul>	<ul style="list-style-type: none"> <li>• It is species specific behaviour</li> </ul>
	<ul style="list-style-type: none"> <li>• It is physical</li> </ul>	<ul style="list-style-type: none"> <li>• It is physical as well as mental</li> </ul>	<ul style="list-style-type: none"> <li>• Maturation changes are genetic by nature</li> </ul>
Characteristics	<ul style="list-style-type: none"> <li>• Perceived in size and weight</li> </ul>	<ul style="list-style-type: none"> <li>• Perceived through behaviour</li> </ul>	<ul style="list-style-type: none"> <li>• Maturation events cannot be speeded</li> </ul>
	<ul style="list-style-type: none"> <li>• It is part of development</li> </ul>	<ul style="list-style-type: none"> <li>• It is all inclusive</li> </ul>	<ul style="list-style-type: none"> <li>up by special efforts</li> </ul>

**7. Development leads to integration :**

Physical and mental growth does not take place simultaneously. For example, we suddenly notice child's teeth but that does not mean that he is grown up. Child starts producing sounds first, then mono syllable, then words, the sentences and then complex sentences.

**8. Behavioural problems are normal for the particular stage :**

Children have certain behavioural patterns in every developmental stage. Any variation in that necessarily need not be labelled as abnormal. Sometimes some behaviour perceived by parents as problem behaviour may subside with age.

**9. Development is predictable :**

The rate of development is fairly constant for every child. This shows that it is possible to predict development of a child.

**10. The child develops as a unified whole :**

Physical and mental development and sociocultural factors like family, peers, school, influence each other and in turn affect development of that individual as a whole.

**4.3 Development : parallel concepts : Growth, Maturation and Development****Growth, Maturation and Development :**

In order to understand meaning of human development, we need to understand its parallel concepts i.e. growth, maturation and development. Growth refers to the physical changes like increase in size, weight etc as the age advances.

Maturation refers to a natural unfolding of the genetic potential at appropriate time in the course of development. These characteristics show up naturally and they are not dependent on environment or training. e.g. approximately around 12 months infant starts walking.

Development results from an interaction between maturation and exposure to training and environmental factors.

Developmental psychologist study the characteristics and patterns of developmental stages. Here we are going to study various developmental stages.

## 4.4 Developmental Stages

### 4.4.1 Prenatal Stages

A period between conception till birth is called prenatal period. The duration of this is period is 238 to 290 day. During this period major developmental changes take place and that too in a very rapid manner. This development goes through three stages : Germinal stage, Embryonic stage and Fetal stage.

#### (a) Germinal Stage :

This stage ranges from conception to 2 weeks. Within few hours after conception, the single fertilized cell called as zygote starts a journey down the Fallopian tube to the uterus where it will begin the process of cell duplication. In this process zygote divides itself into two cells, then goes on duplicating itself. By the end of this period zygote gets attached to the wall of uterus.

#### (b) Embryonic stage :

At this point, the mass of cells is known as an embryo. This period starts from the third week after conception and continues till the 9th week. It is a time when the mass of cells becomes distinct as a human. The embryonic stage plays an important role in the development of the brain. Almost all the internal as well as external organs are developed by the end of this period.



**Fig. 4.1 Embryo**

#### (c) Fetal stage :

The fetal period is marked by more important changes in the brain. This period of development begins during the ninth week and lasts until birth. The body parts and structures established in the embryonic stage continue to develop during this stage.

The characteristics of prenatal stages are as follows :

- (i) Heredity serves as the foundation for later development.
- (ii) Favourable conditions in the mother's womb can foster development of hereditary potentials while unfavourable conditions can block their development. It may distort the pattern of future development
- (iii) Sex determination takes place during first three months of life.
- (iv) Proportionally faster growth and development takes place during the prenatal period as compared to an individual's entire life.
- (v) If proper care of the mother is not taken, it may lead to physical and psychological hazards to the unborn child.

### 4.4.2 Postnatal Stages

#### (a) Neonatal Stage :

From birth to two weeks period is called neonatal stage. During this period, newborn starts adjusting with the external environment. For example, outside temperature. The neonate sleeps for around 18 to 20 hours.

The **characteristics of neonatal stage** are as follows :

- (i) Neonatal stage is the shortest of all developmental periods
- (ii) Neonatal stage is the time of radical adjustment

- (iii) Neonatal stage can be a hazardous period, both physically and psychologically. Physically because the neonate has to make radical adjustments to the new and different environment and psychologically because it is the time when the attitudes of significant people towards the neonate will have an effect on his development.

**(b) Infancy :**

This stage ranges between 2 week after birth to 2 years. During this stage rapid physical and motor development takes place. Within 2 months child can turn his head. Child can sit and walk with support by 9 months. Child starts walking independently by around 12th months of age.



**Fig. 4.2 Infant**

The **characteristics of infancy** are as follows :

- (i) Infancy is a foundation age because many behavioural patterns, attitudes, emotions develops during this age.
- (ii) There is rapid growth and changes. These change are qualitative as well as quantitative.
- (iii) Infancy is an age of independence due to control on body movements which enables infant to sit, stand and walk and to manipulate the objects.
- (iv) As a result of developed interests and abilities, infancy is the age of increased individuality.
- (v) Infancy is the beginning of socialization, as infant goes from being asocial to social.

**(c) Early Childhood :**

This stage extends from 2 years to about 6 years. This age is also called preschool age. Child develops control over his muscles. Child becomes physically independent. The physical territory of the child increases, so automatically child learns about social behaviour. Child asks number of questions to others. Hence this age is called as ‘questioning age’ or the ‘age of curiosity’.



**Fig. 4.3 Child in nursery**

The **characteristics of Early Childhood** are as follows :

- (i) Parents call this age as toy age as children play with toys.
- (ii) Educators called this age as preschool age as the child starts going to preschool.
- (iii) Psychologists term this age as pre-gang age as in earlier stage the child plays alone, does not share his toys but now he starts mixing around.
- (iv) They experience stranger anxiety or separation anxiety.



#### (d) Late Childhood :

This stage ranges between 6 years to 11 years of age. According to psychologists this age is also called as the 'gang age'. During this stage boys and girls make their separate gangs. The fundamental skills of reading, writing, and calculations develop at this age.

According to educationalists this is the age of skill development. During this stage, speed of development is slow. At this stage eye-hand co-ordination develops along with micro skills. Even cognitive abilities like thinking, reasoning, start developing.

The **characteristics of Late Childhood** are as follows :

- (i) For many parents, late childhood is the troublesome age. As they are curious by nature, they experiment with new ideas. They are not satisfied with lame answers.
- (ii) Educators regard late childhood as a critical period in the achievement drive.
- (iii) For psychologists, late childhood is the gang age.

#### (e) Adolescence :

Have you ever noticed that

- Your friend has suddenly started gaining weight.
- Girls and boys in your group have started becoming more conscious about their looks and appearance.
- Suddenly your friend starts talking about his or her crush.
- You feel like having a girlfriend or boyfriend.



**Fig. 4.4 Adolescents in a group**

Hold on, you have reached adolescence.

Age between late childhood and youth is called adolescence. This age ranges between 12-13 years to 19-20 years. During this age rapid physical development takes place. This stage begins with puberty. Height and weight of adolescent increases. Menarche in girls and nocturnal emission in boys occur. This is due to maturation of sex organs. Secondary sex characteristics develop during this stage like breast development among girls, growth of moustache and pubic hair among boys and their voice becomes hoarse.

At this point, search for identity and independence develops. Thoughts are more logical, abstract and idealistic. Adolescents like to spend more time with their friends.

**Some other adjustment problems faced by adolescents.**

##### (1) Internet addiction :

Adolescents are indulging more in social media like whatsapp and face book and in online games which in turn leads to problems like lack of concentration and social interaction.

##### (2) College drop outs :

Some students may leave college before completing their graduation due to financial problems or problems in academics.

### (3) Identity crisis :

Adolescents are confused about who they are as they are neither child nor adult. Parents treat them differently in different situations.

Some adolescents pursue psychological moratorium. A period in which they take time off from upcoming responsibility of adulthood to explore various roles and possibilities.

#### **James Marcia's Approach to Identity development-**

##### (A) Identity foreclosure :

Here adolescent just accepts others decision about what is best for them. For example : a doctor's son becomes a doctor. Such adolescents are happy and self satisfied. They have need for self approval. They tend to be authoritarian.

##### (B) Identity diffusion :

Here adolescents neither explore nor commit to the alternatives. Such people are socially withdrawn. They appear carefree but their lack of commitment impairs their ability to form close relationships.

Some adolescents shift among all the four categories but for most of them identity gels in late teens and early twenties.

##### (C) Moratorium :

Here adolescents explore some alternatives but make no commitments .They experience high anxiety and psychological conflict. They are lively and appealing and seek intimacy with others.

##### (D) Identity Achievement :

Here adolescents explore and search through what they are and what they do. Teens who have reached this stage tends to be psychologically healthier, higher in achievement, motivation and moral reasoning.

### (4) Depression :

When adolescents experience break up in relationship, failure in exams or in particular activity or death of loved one, they experience

feeling of sadness, loss or grief. Sometimes, they feel so hopeless that they stop following normal routine .

Depression could be due to genetic and environmental factors. Environmental factors like parental over expectations, unhealthy competition, peer pressure, unpopularity, having less number of friends, getting bullied , rejection are associated with depression

### (5) Suicide :

The rate of adolescent suicide is higher for boys although girls attempt suicide more frequently than boys. In case of boys, it is more fatal as they use violent means to commit suicide .

Social inhibition, perfectionism and high level of stress and anxiety also create higher risk of suicidal attempts.

#### **Activity 1 :**

##### **Warning signals of suicide**

- Look for such signs among your friends/ classmates and if someone has such signs, talk to them. Encourage them to talk to Psychology teacher/ school counsellor.
- If a friend talks like 'I wish I was dead' or 'I am worthless, I must die'.
- A friend is missing classes or there is decline in his grades.
- Giving away important possessions like their favourite pen to others.
- Writing a will.
- Loss of appetite or excessive eating.
- Change in sleeping patterns , slowness, lethargy and reduced communication.
- Dramatic changes in behavioural patterns such as shy person becoming outgoing.
- Preoccupation with sad music, art or literature.

### Do you know this?

World suicide prevention day is observed on 10th September every year in order to provide world wide commitment and action to prevent suicides with various activities around the world. This activity is observed since 2003.

The **characteristics of Adolescence** are as follows :

- (i) Adolescence is an important period because this period has its immediate effect on attitudes and behaviour of an adolescent.
- (ii) Adolescence is a transitional period, as it is a bridge between childhood and adulthood.
- (iii) Adolescence is a period of physical changes.
- (iv) Adolescence is an age of challenges, because during childhood, majority of problems are solved by parents and teachers but an adolescent wants to be independent.
- (v) Adolescence is a time for searching one's own identity.
- (vi) Adolescence is a time of unrealistic ideas. They have a tendency to look at life through rose-tinted glasses and they day dream a lot. As a result they face problem of lack of concentration.
- (vii) Adolescence is a threshold of adulthood.

### (f) **Adulthood :**

This stage ranges between 21 years to 40 years. During this period personal career choice and economic independence are the prime concerns for a young adult. At this stage individual tries to settle in his life. Men and women take responsibility of their families and start earning money. They plan for earning money, having children, gaining place in society during this stage.

The **characteristics of Adulthood** are as follows:

- (i) Adulthood is the age of settling-down. Once they are legally mature they have to shoulder their own responsibility.
- (ii) Adulthood is the reproductive age.
- (iii) Problems faced in this stage are different from problems faced at earlier age.
- (iv) An adult tries to establish himself in life and as a result he experiences tension.
- (v) As they start working and get married they don't get time to mingle around with their friends like earlier.
- (vi) They have to adjust to new patterns of life.
- (vii) Adulthood is a time of changed experiences, change in value system.
- (viii) Early adulthood is the time of adjustment to new lifestyle.

### (g) **Late adulthood :**

This period range between 40 years to 60 years of life. It is the time of more responsibilities. They assists next generation to be competent. The capacity of reproduction starts declining. Mental and physical capacities slowly start declining.

The **characteristics of Late adulthood** are as follows :

- (i) Late adulthood is a dreaded period, due to mental and physical deterioration.
- (ii) Late adulthood is a time of transition, where men and women leave their physical and behavioural characteristics of adulthood.
- (iii) Late adulthood is a time of stress, as there is radical financial burden.



- (iv) Individual may experience nervous breakdown due to overwork, anxiety etc.
- (v) Late adulthood is a time of achievement. Erikson says that at this age people get experiences and society expect them to be more constructive.
- (vi) Late adulthood is a time of evaluation, where they evaluate themselves by their achievements and previous aspirations.
- (vii) Late adulthood is the time of Empty Nest, as children go out for higher education, job or get married.

#### (h) Old Age :

This stage ranges between 60 years to death. During this stage individual perceives that his capacities and strengths are declining gradually. Individual faces certain health issues. An individual has to adjust to his environment. In some cases, death of spouse leads to loneliness.

The **characteristics of Old Age** are as follows :

- (i) Old age is a period of decline in physical and mental capacities.
- (ii) There are individual differences in the impact of aging.
- (iii) Old age is judged by different criteria like society tends to judge age in terms of physical appearance and activities.
- (iv) There are many stereotypes about old people.
- (v) Most stereotypes are unfavourable.
- (vi) Elderly people have a minority-group status.
- (vii) Aging requires role changes
- (viii) Adjustment is poor during old age.
- (ix) The desire to be young is seen in old age.



**Fig. 4.5 Life span : from infancy to old age**

**Table No. 2**  
**Stages of development**

Name of the stage	Duration of Development	Characteristics
Prenatal Stage	Conception to Birth	<ul style="list-style-type: none"> <li>• Child is completely dependent on mother for nourishment.</li> <li>• Rapid development of physical systems and organs.</li> </ul>
Neonatal	Birth to 2 weeks	<ul style="list-style-type: none"> <li>• Child is still dependent.</li> <li>• Development of initial reflexes.</li> </ul>
Infancy	2 weeks to 2 years	<ul style="list-style-type: none"> <li>• Motor, Cognitive and psychosocial development.</li> <li>• Rapid physical development.</li> </ul>
Early Childhood	2 years to 6 years	<ul style="list-style-type: none"> <li>• Physical development is comparatively slow.</li> <li>• Increase in cognitive and linguistic development.</li> <li>• Beginning of Socialization.</li> <li>• Change in adjustment ability, gang age.</li> </ul>
Late Childhood	6 years to 10-12 years	<ul style="list-style-type: none"> <li>• School provides opportunity for overall development.</li> <li>• Physical, mental, cognitive and psychosocial abilities can be observed.</li> </ul>
Adolescence	12-14 years to 20-21 years	<ul style="list-style-type: none"> <li>• Rapid visible physical changes occur.</li> <li>• Concept of self identity starts developing.</li> <li>• Career related awareness develops.</li> </ul>
Early Adulthood	21 years to 40 years	<ul style="list-style-type: none"> <li>• Individual completes education and chooses his career.</li> <li>• Chooses suitable partner.</li> <li>• Give importance to family responsibilities.</li> </ul>
Late Adulthood	40 years to 60 years	<ul style="list-style-type: none"> <li>• Increase in family responsibilities.</li> <li>• Increase in occupational responsibilities.</li> <li>• Importance is given to social responsibilities.</li> <li>• Societal expectations.</li> <li>• Responsibility of parents.</li> <li>• Menopause in women / Andropause in men.</li> </ul>
Old Age	60 years till death	<ul style="list-style-type: none"> <li>• Retirement life begins.</li> <li>• Increasing health problems.</li> <li>• Forced leisure.</li> <li>• Individual starts thinking about death.</li> </ul>



### Summary :

Development means progressive series of changes that occur in an orderly predictable pattern as a result of maturation and experience. Hereditary potentials as well as the physical and social environment are the factors that determine development. Development occurs at appropriate time in various aspects, be it physical, cognitive, emotional or social. There is a certain pattern and sequence in development. Therefore, it is predictable. We can observe developmental norms and spot deviation in certain cases. Development begins right from conception and continues throughout life till death. Each of the various stages of development is marked with certain typical changes and problems. Based upon the norms of development, there is a set of expectation about changes in an individual at a certain age. This set is known as developmental task.

### Key Terms :

- Development
- Maturation
- Egocentrism
- Prenatal stages
- Conception
- Zygote
- Germinal stage
- Fetal stage
- Neonatal stage
- Infancy
- Developmental tasks
- Identity crisis
- Foreclosure
- Diffusion
- Moratorium

### Key Psychologist :

**James Marcia** observed that every adolescent resolves his identity crisis going through the four states: Foreclosure, Diffusion, Moratorium and Achievement.

## Exercise

### Q. 1. (A) Complete the following statements

1. The rate of development in each stage is .....  
*a. Same                      b. Different*  
*c. Slow*
2. Developmental changes occur in ..... pattern.  
*a. Predictable    b. Unpredictable*  
*c. Uncertain*
3. The period between conception to birth is called .....  
*a. Post natal    b. Perinatal*  
*c. Prenatal*
4. .... period is also known as the period of identity crisis.  
*a. Childhood    b. Middle age*  
*c. Adolescence*

### (B) Match the following pairs.

A	B
1. Early childhood	a) A single fertilized cell
2. Adolescence	b) From second week to 2 years after birth
3. Infancy	c) Age of Questioning
4. Zygote	d) Adjusting to the new environment after birth
5. Neonatal period	e) Storm and stress

### (C) State whether the following statements are true or false.

1. Development has specific and continuous pattern.
2. Development proceeds from specific to general.
3. Development proceeds through dependency to independence.
4. All the changes in an individual are due to development.

### (D) Identify the odd item from the following.

1. Zygote, Neonate, Embryo, Foetus.
2. Early childhood, Neonate, Foetus, Infancy.

### Q. 2. Explain the following concepts

1. Explain characteristics of human development.
2. Why is prenatal period is the most crucial period in development?
3. What are the developmental tasks?
4. Describe the neonatal stage.
5. What are the characteristics of the early childhood?
6. Write characteristics of the late childhood.
7. Describe the problems during adolescence.
8. Write a note on adulthood.
9. Explain the adjustment problems in middle age.
10. Discuss the application of the principles of human development in different fields.

### Q. 3. Compare and contrast :

1. Growth and development
2. Maturation and development
3. Prenatal and post natal stages of development