Unit I
Growth and Development

LIFE SPAN PSYCHOLOGY

What is Lifespan Development?

- *Lifespan Development* is the field of study that examines patterns of growth, change, and stability in behavior that occur throughout the entire lifespan.

Things to keep in mind about Lifespan Psychology:

- Lifespan Psychology is a scientific, developmental approach that focuses on human development
- Scientists who study the lifespan know that neither heredity nor environment alone can account for the full range of human development
- Development is a continuing process throughout the lifespan
- Every period of life contains potential for growth and decline in abilities

Three Major Areas of Study in Lifespan Development

- Physical development
- Cognitive development
- Personality and Social development

Physical Development

- Many of us are familiar with the height and weight charts that pediatricians consult to estimate if babies, children, and teens are growing within normative ranges of physical development. We may also be aware of changes in children's fine and gross motor skills, as well as their increasing coordination, particularly in terms of playing sports. But we may not realize that physical development also involves brain development
- Physical Development is the change in size, body composition and height that occur as humans develop from birth to adulthood
- Gross motor skills involve large muscle movement such as crawling, walking and jumping
- Fine motor skills involve small muscle movements like cutting with scissors and writing with pen or pencil.

Cognitive Development

- If we watch and listen to infants and toddlers, we can't help but wonder how they learn so much so fast, particularly when it comes to language development.

- Then as we compare young children to those in middle childhood, there appear to be huge differences in their ability to think logically about the concrete world around them.
- Cognitive development includes actions or process that involve thinking and knowing.
- The way people change and grow in how they think is called cognitive development
- Part of cognitive development is the advance and expansion of the use of language.
- In moral development, people are able to approach problems based on their life stage

Social-Emotional Development

This development refers to the changes related to a person's

- Social relationships

- Feelings
- Social skills
- Self esteem
- Gender identity
- Ways of coping with situation


Maslow's Theory of Human Needs
Self-Actualization
All needs have been fulfilled to some degree
Esteem
Need to be liked and respected
Love and Acceptance
Need for support, assurance, praise, acceptance
Security
Need to feel safe in surroundings
Physical Needs
Need for air, water, food, clothing, shelter

Age and Range of Lifespan Psychology

Lifespan: From conception to death

Divided into these age periods of study:

- Prenatal period
- Infancy
- Toddlerhood/Preschool
- Middle childhood
- Adolescence
- Young adulthood
- Middle adulthood
- Late adulthood
- Death/Dying

GROWTH AND DEVELOPMENT

Growth – the measurable physical changes that occur throughout a person's life.

examples: height, weight, body shape, dental structure (teeth)

Development – Refers to the changes in intellectual, mental and emotional skills that occur over time. Think, maturation.

10 LIFE STAGES

Prenatal Period: The stage before taking birth

Infancy: BIRTH TO ONE (1) Year

Baby Hood

Early Childhood: 1-6 years

Late childhood: 6-12 years

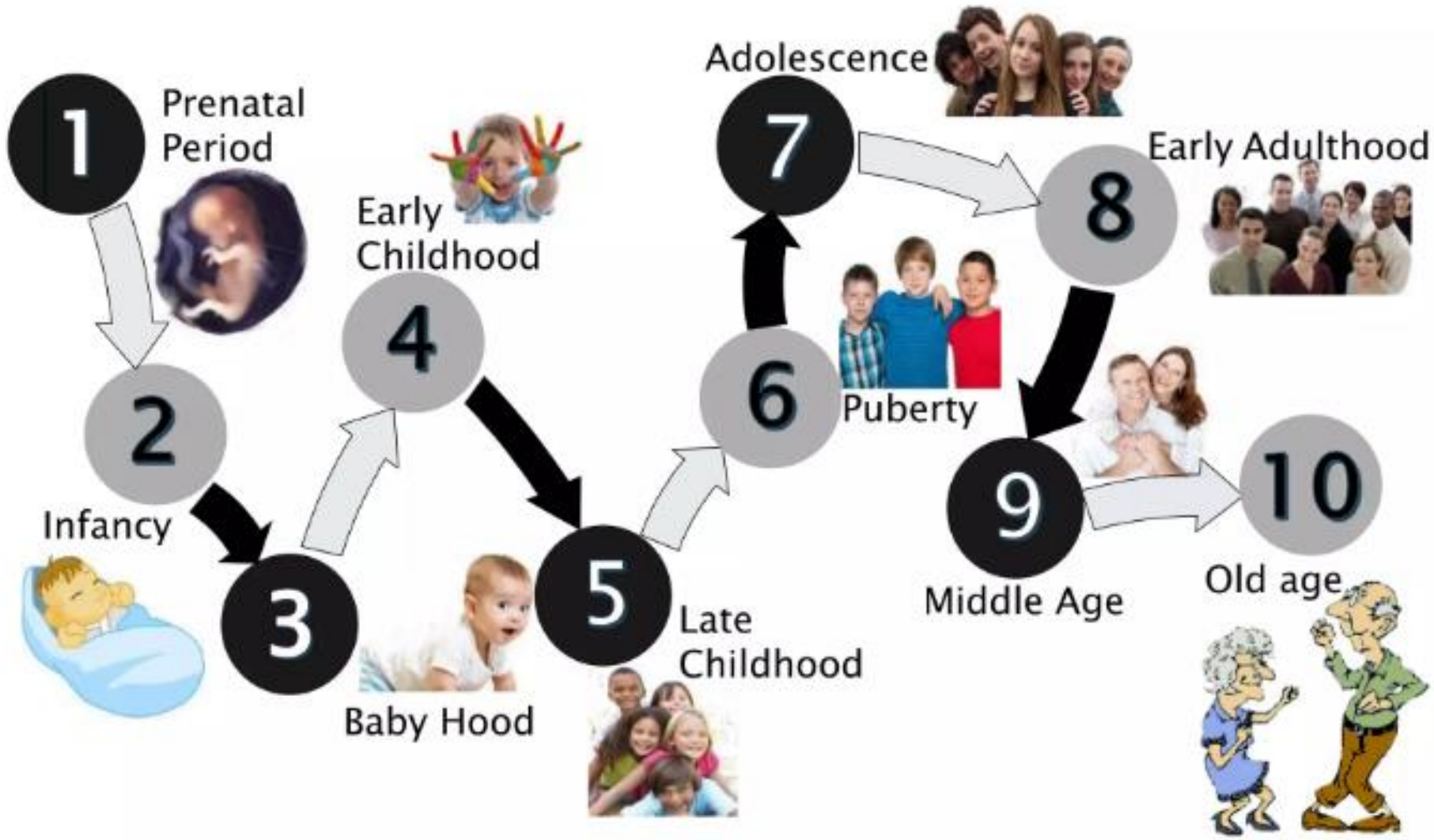
Puberty or preadolescence

Adolescence: 12-18 years

Early Adulthood: 19-40 Years

Middle Adulthood: 40-65 Years

Old age: After 65 Years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Prenatal Period
2
Infancy
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Baby Hood
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Early Childhood
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Late Childhood
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Puberty
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Adolescence
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Early Adulthood
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Middle Age
10
Old age

FOUR MAIN TYPES OF GROWTH AND DEVELOPMENT

1. Physical – body growth that includes height and weight changes.

2. Mental – intellectual development, problem solving

3. emotional – refers to feelings and includes dealing with love, hate, joy, fear, excitement, and other similar feelings.

4. social – refers to interactions and relationships with other people.

PRENATAL PERIOD

The developments from conception till birth of a baby constitute the prenatal stage. The approximate period of prenatal development is taken to be 9 calendar months or 10 lunar months (i.e., 280 days), although babies are not born exactly after 280 days of conception.

Biologically it takes about 266 days from conception for a fetus to become ready for the birth process. Actual birth of normal full term baby may take place any time after that.

Prenatal stage is further divided into three phases.

The first phase – the germinal period – is the period from conception until implantation. Conception occurs when a sperm penetrates the wall of a ripened ovum forming a zygote. In about 8–14 days, the zygote gets firmly attached to the wall of the mother's uterus. This is called implantation which brings the germinal period to end.

The second phase of prenatal development is the period of the embryo which lasts from the beginning of the third week to the end of the eighth week. During this time all major organs are formed and the heart begins to beat.

The third phase is the period of the fetus. It lasts from the third prenatal month until the baby is born. The major organ systems begin to function and the growth of the organism is quite rapid.

INFANCY – BIRTH TO 1 YEAR

The term "infant" is typically applied to young children under one year of age

Physical : The most dramatic and rapid changes in growth and development happen during the first year of life.

Mental : infants make their needs known by crying. They cannot speak yet, but are able to understand some words by six months old. By one year, they understand many words and use single words in their vocabulary.

Needs : infants are dependent on others for all their needs. Love and security are essential for emotional and social growth. Stimulation is essential for mental growth.

BABY HOOD

Babyhood is a time when babies are totally dependent upon their parents and caregivers for their protection and care. Consistent, adequate, gentle care can encourage the infant to develop the capacity to trust people.

- It is the true foundation age.
- It is an age of rapid growth and change.
- It is an age of increasing independency.
- It is the age of heightened individuality.
- It is the foundation period of socialization.
- It is the foundation period for sex-role typing.

EARLY CHILDHOOD (1-6)

Early childhood is a stage in human development. It generally includes toddlerhood and some time afterwards.

Physical: By age 6, the average weight is 45lbs and the average height is 46 inches. Muscle coordination allows the child to run, climb, and move freely. Children learn how to write, draw and use a fork and knife. By 2-4 years, most children learn bowel and bladder control.

Mental: Develops rapidly. Vocabulary grows from using several words at age one to 1,500-2,500 words by age 6. By age 6 most children want to learn how to read and write.

Emotional: "terrible twos"-children become frustrated when they cannot perform as desired. They can become stubborn.

Needs: still include food, rest, shelter, love, and security. They must learn to be responsible and to follow rules. This is accomplished by making reasonable demands based on the child's ability.

LATE CHILDHOOD (6-12)

It is the time period from the age of 6 until the age of 12 years. It is in late childhood that the first signs of puberty usually begin to appear. A lot of growth is experienced by both boys and girls during late childhood.

Physical: Also known as preadolescence. Most of the baby teeth are lost and permanent teeth erupt. During ages 10-12, secondary sexual characteristics may begin to develop in some children.

Mental: Rapid because child is in school.

Emotional: Fears surrounding starting school are brought under control. By ages 10-12, sexual maturation and body changes can lead to periods of depression followed by periods of joy.

Needs: The same as infancy and early childhood but now peer acceptance is added.

PUBERTY

Puberty is the process of physical changes through which a child's body matures into an adult body capable of sexual reproduction.

It is initiated by hormonal signals from the brain to the gonads: the ovaries in a girl, the testes in a boy. In response to the signals, the gonads produce hormones that stimulate libido and the growth, function, and transformation of the brain, bones, muscle, blood, skin, hair, breasts, and sex organs.

Physical growth—height and weight—accelerates in the first half of puberty and is completed when an adult body has been developed. Until the maturation of their reproductive capabilities, the pre-pubertal physical differences between boys and girls are the external sex organs.

On average, girls begin puberty around ages 10–11 and end puberty around 15–17; boys begin around ages 11–12 and end around 16–17.

ADOLESCENCE (12-18)

Adolescence (from Latin *adolescere*, meaning 'to grow up') is a transitional stage of physical and psychological development that generally occurs during the period from puberty to legal adulthood (age of majority).

Adolescence is usually associated with the teenage years, but its physical, psychological or cultural expressions may begin earlier and end later.

Physical: physical changes ae most dramatic in the early period. Growth spurts occur that can affect coordination.

Mental: growth primarily involves increase in knowledge and sharpening of skills. Conflict occurs when adolescents are treated both as children and adults, or told to 'grow up' while being reminded that they are 'still children'.

Emotional: often stormy and in conflict. Trying to establish independence and identities.

Social: spending more time with friends than family. Seek security in groups of people their own age.

Needs: In addition to basic needs, adolescents need reassurance, support and understanding. Eating disorders and chemical abuse may occur if adolescents experience feelings of inadequacy or insecurity.

EARLY ADULTHOOD (19-40)

Early adulthood (also called "emerging adulthood") is a stage of life between 18 and 25 years, when adolescents become more independent and explore different life possibilities.

Early adulthood or **emerging adulthood** may also refer to Young adulthood stage in Erik Erikson's model.

Physical: Usually the most productive life stage. Physical development is basically complete. This is the prime time for childbearing.

Mental: formal education continues, young adults may choose to marry and start families.

Emotional: may experience stress related to careers, marriage, family.

Social: development frequently involves moving away from peers to association with coworkers and mates. For example, males may become nurses or secretaries, females may take administrative or construction positons.

MIDDLE AGE (40-65)

This time period in the life of a person can be referred to as middle age. This time span has been defined as the time between ages 45 to 65 years old. Many changes may occur between young adulthood and this stage.

The body may slow down and the middle aged might become more sensitive to diet, substance abuse, stress, and rest. Chronic health problems can become an issue along with disability or disease.

Physical: changes begin to occur. Hair begins to gray and thin, skin begins to wrinkle, hearing loss starts, vision declines, and weight gain occurs.

Mental: mental ability can continue to increase. This is a period when individuals understand life and have learned to cope with many of its stresses.

Emotional: can be a period of contentment or crisis. Emotional status varies depending on life changes revolving around children growing up and leaving home, job satisfaction, financial success, good health.

OLD AGE (65 YEARS TO DEATH)

"elderly", "senior citizen", "golden ager" , "retired citizen"

Old age refers to ages nearing or surpassing the life expectancy of human beings, and is thus the end of the human life cycle.

This stage is the extension after 65 years till death.

Physical: physical development are on the decline. All body systems are affected. Skin becomes dry, wrinkled, and thinner. Hair becomes thin and bones become brittle and more likely to break. Muscle loses tone, nervous system can cause intolerance to temperature changes.

Mental: mental abilities vary among individuals. While some elderly people continue to learn, others have mental declines that can affect short-term memory. Diseases such as Alzheimer's disease can lead to irreversible loss of memory, Intellectual functions, speech, and disorientation.

Emotional: Varies depending on individual's ability to cope. some remain happy and enjoy life, while others may become lonely, frustrated, depressed and withdrawn.

Needs: In Addition to those of all other life stages, The elderly need a sense of belonging, self-esteem, financial security, social acceptance and love Old people often have limited regenerative abilities and are more susceptible to disease, syndromes, injuries and sickness than younger adults.

The organic process of ageing is called senescence, the medical study of the aging process is called gerontology.

PRINCIPLES OF DEVELOPMENT

- Development is life long
- Development follows a specific sequence
  1. Cephalo caudal delevopment
  2. Proximo distal delevopment
- Development is irreversible
- Development proceeds from general to specific
- Child develops as whole
- Development is cumulative in nature
- Development varies from one child to another
- Biological and environmental contexts strongly influence development
- Development in multidimensional and multi directional

Recent focus of interest in the life span

- Lifespan development involves the exploration of biological, cognitive, and psychosocial changes and constancies that occur throughout the entire course of life.
- It has been presented as a theoretical perspective, proposing several fundamental, theoretical, and methodological principles about the nature of human development.
- An attempt by researchers has been made to examine whether research on the nature of development suggests a specific metatheoretical worldview. Several beliefs, taken together, form the “family of perspectives” that contribute to this particular view.

Emergence of Life Span Development

- In the past most of the scientific literature on development focused on childhood and adolescent years.

- This was because the changes that occur during these early years are rapid in rate and obvious and observable, especially the physical, mental and personality differences which are not as readily detectable in later life as in early years.
- Interest in adult development and ageing evolved only in the late 1940's. The rapid growth of the adult population and longer life expectancy gave rise to a number of problems to the adults themselves as well as to their families, employers and the society.
- This created a need to pay attention to the developmental changes in the adult years of life.

Features of Life span development

- Development is a complex phenomenon Baltesetal (1999) identified four key features of life span development. These features are multidimensionality, plasticity, historical context and multiple causation.

1. Multidimensionality: Development involves both growth and decline as people grow in one area they may slow in another and at different rates. For e.g.: People's vocabulary ability tends to increase throughout life but reaction time tends to slow down with ages. Many predictable behaviour changes occur through maturation as a result of growth of central nervous system as long as the needed environment is present.
2. Plasticity: One's capacity is not predetermined. Many skills can be learned or improved with practice even in later life. For example people can learn ways to remember information to deal with decline in memory ability with age. However, there is a limit for the potential improvement which is set by heredity.

Features of Life span development

- Historical context: Each of us develops within a particular set of circumstances determined by the historical time in which we are born and the culture in which we grow up. Example, Economic problems due to depression in 1930's, competition was less. As economy expanded advancement was rapid, more carriers opened when these individuals were in the twenties. Now in late 1990's conditions are different competition is great opportunities limited and prospects for advancement lower.

- Multiple causation: Development results from biological, psychological, socio-cultural and life cycle forces. For e.g: Even two children growing up in the same family have different experiences if one has a developmental disability and the other does not.

Features of Life span development

- History related events: These events are more important in early adulthood and have a maximum effect because at that time the individual is more affected by his / her social interaction with others. For e.g: War, economic recession, changes in the roles of males and females etc. Even the life experiences of people born in the same year (cohort) are similar and these can have lifelong effects upon the individual

- Behaviour related to unique life events refer to the events that are experienced by the individual and are not related to age or social conditions. Example; death of the parent, moving to a new city etc. In old age the unique life events are most influential, but the importance of age related factors increases. All these factors combine to affect an individual's development throughout life.

Happiness Over the Lifespan

- Happiness evolves with the different ages and milestones we experience. Although overall happiness levels may not oscillate dramatically, happiness tends to follow some patterns over the lifespan. Different aspects of life may provide greater satisfaction and meaning as we progress through childhood, adolescence, adulthood, and old age.

How Happiness Changes With Age

- Every individual has a unique experience of life. But on average, happiness seems to follow a particular trajectory. Life satisfaction tends to begin fairly high, dip from young adulthood to midlife, and then climb again throughout later life. Relationships, employment, finances and more all play a role in how happiness ebbs and flows over time.

Does happiness decline with age?

People often worry that happiness diminishes with age, but that's actually not the case. One large study found just a slight overall dip in happiness between age 20 and age 70—on a scale of 1 to 10, average life satisfaction went from 5.8 to 5.4.

Finding Happiness at Every Age

Happiness blossoms for different individuals at different ages. But certain influences may be stronger at specific life stages, such as freedom in childhood, socializing in adolescence, and professional goals in adulthood. No matter the life stage, though, there are always ways to find greater happiness.

What makes a happy childhood?

There are many ways to raise happy kids, but meeting three of their basic needs—for freedom, belonging, and fun—is a great place to start. Find opportunities for children to feel a greater sense of independence, and to spend quality time with family and friends to cultivate belonging.

What makes adolescents happy?

Activities that involve socializing with others and that don't rely on screens tend to make teens happy, research suggests. Social plans, sports, volunteering, and religious services are linked to greater happiness, and being alone, listening to music, and time online are linked to less happiness. Additionally, good sleep is key for happiness in adolescence.

Finding Happiness at Every Age

What contributes to happiness in adulthood?

In addition to other factors, employment and marriage are both linked to greater life satisfaction in adulthood, research suggests. Employment has an especially strong influence on life satisfaction, an effect that peaks around age 50.

What makes older adults happy?

After a dip around age 40, research shows that happiness grows with age. Older adults derive happiness from meaningful relationships, volunteer work, and purpose-driven goals. While young adults often crave novelty and adventure, older adults tend to better appreciate smaller moments of joy, such as a visit from an old friend or a delicious meal.

The Physical Benefits of Happiness

Researchers have pinned down connections between happiness and more specific aspects of health, such as the immune response we mount in response to a virus or how long our lives will ultimately be.

What are the physical benefits of happiness?

Happiness is associated with an array of physical health benefits, such as lower blood pressure, reduced risk of stroke, a stronger immune system, and even a longer life. Positive emotions are also linked to a reduced risk of injury in young adults and frailty in older adults.

Do happier people live longer?

Yes, happiness is correlated with a longer lifespan. People who report feeling a stronger sense of happiness and well-being live longer, on average, than do those who report weaker feelings, and the effect exists for both men and women.

Happiness is linked to having a strong immune system, helping prevent illness and making symptoms less severe.

Unhappiness

J Econ Behav Organ. examined the relationship between unhappiness and age using data from eight well-being data files on nearly 14 million respondents across forty European countries and the United States and 168 countries from the Gallup World Poll. Below are few points about unhappiness

He used twenty different individual characterizations of unhappiness including many not good mental health days; anxiety; worry; loneliness; sadness; stress; pain; strain, depression and bad nerves; phobias and panic; being downhearted; having restless sleep; losing confidence in oneself; not being able to overcome difficulties; being under strain; being unhappy; feeling a failure; feeling left out; feeling tense; and thinking of yourself as a worthless person.

Unhappiness

University of Oxford researchers found the exact opposite of the common belief that sadness and tension cause poor health, according to the study. Instead, they found that neither happiness nor sadness impacted a person's lifespan.

"Many still believe that stress or unhappiness can directly cause disease, but they are simply confusing cause and effect," Richard Peto, of the University of Oxford, said in a news release. "Of course people who are ill tend to be unhappier than those who are well, but the UK Million Women Study shows that happiness and unhappiness do not have any direct effect on death rates."

Thank you

Unit I
Prenatal Period

CHARACTERISTICS-IMPORTANCE OF CONCEPTION - PERIOD OF PRENATAL DEVELOPMENT - ATTITUDES OF SIGNIFICANT PEOPLE - HAZARD DURING THE PRENATAL PERIOD.

Prenatal Period

The Development from Conception till Birth is the prenatal period

Characteristics and importance of conception

While you might think of child development as something that begins during infancy, the prenatal period is also considered an important part of the developmental process.

Prenatal development is a time of remarkable change that helps set the stage for future psychological development.

The brain develops over the course of the prenatal period, but it will continue to go through more changes during the early years of childhood.

For the world to evolve conception is very important.

Man kind will come to an end if a parents decides not to conceive.

Hence it’s a natural process to be taken care as every individual responsibility

Prenatal stages

The process of prenatal development occurs in three main stages.

The first two weeks after conception are known as the germinal stage,

The third through the eighth week is known as the embryonic period

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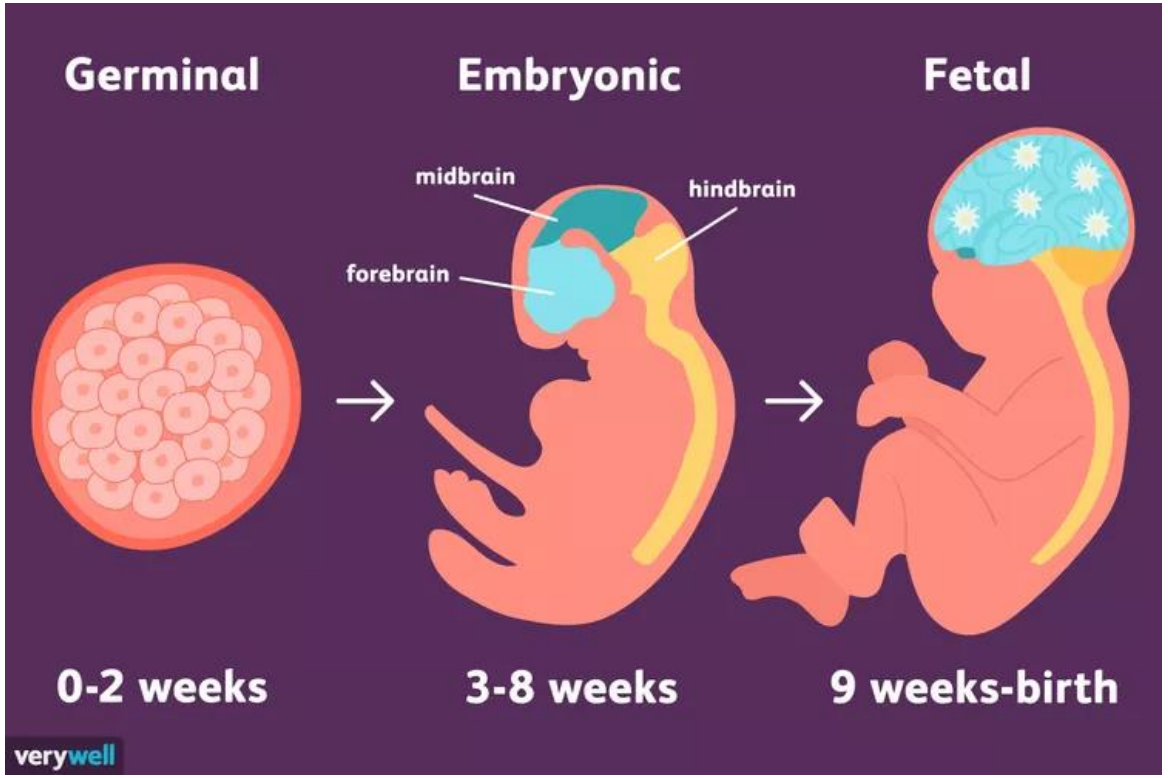
The time from the ninth week until birth is known as the fetal period.



Germinal Stage

The germinal stage begins at conception when fertilized egg formed as a zygote

Just a few hours after conception, the single-celled zygote begins making a journey down the fallopian tube to the uterus.

Cell division begins approximately 24 to 36 hours after conception.

Through the process of mitosis, the zygote first divides into two cells, then into four, eight, sixteen, and so on.

A significant number of zygotes never progress past this early part of cell division, with as many as half of all zygotes surviving less than two weeks.

Germinal Stage

Once the eight-cell point has been reached, the cells begin to differentiate and take on certain characteristics that will determine the type of cells they will eventually become.

As the cells multiply, they will also separate into two distinctive masses: the outer cells will eventually become the placenta, while the inner cells form the embryo.

Cell division continues at a rapid rate during the approximately week-long journey from fallopian tube to uterus wall.

The cells develop into what is known as a blastocyst. The blastocyst is made up of three layers, each of which develops into different structures in the body.

1. **Ectoderm**: Skin and nervous system
2. **Endoderm**: Digestive and respiratory systems
3. **Mesoderm**: Muscle and skeletal systems

Germinal Stage

Finally, the blastocyst arrives at the uterus and attaches to the uterine wall, a process known as implantation.

Implantation occurs when the cells nestle into the uterine lining and rupture tiny blood vessels.

The connective web of blood vessels and membranes that form between them will provide nourishment for the developing being for the next nine months.

Implantation is not always an automatic and sure-fire process.

When implantation is successful, hormonal changes halt the normal menstrual cycle and cause a whole host of physical changes.

Embryonic Stage

At this point, the mass of cells is now known as an embryo. The beginning of the third week after conception marks the start of the embryonic period, 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.

Approximately four weeks after conception, the neural tube forms. This tube will later develop into the central nervous system including the spinal cord and brain.

The neural tube begins to form along with an area known as the neural plate.

The earliest signs of development of the neural tube are the emergence of two ridges that form along each side of the neural plate.

Embryonic Stage

Over the next few days, more ridges form and fold inward until a hollow tube is formed.

Once this tube is fully formed, cells begin to form near the center.

The tube begins to close and brain vesicles form. These vesicles will eventually develop into parts of the brain, including the structures of the forebrain, midbrain, and hindbrain.

Around the fourth week, the head begins to form, quickly followed by the eyes, nose, ears, and mouth.

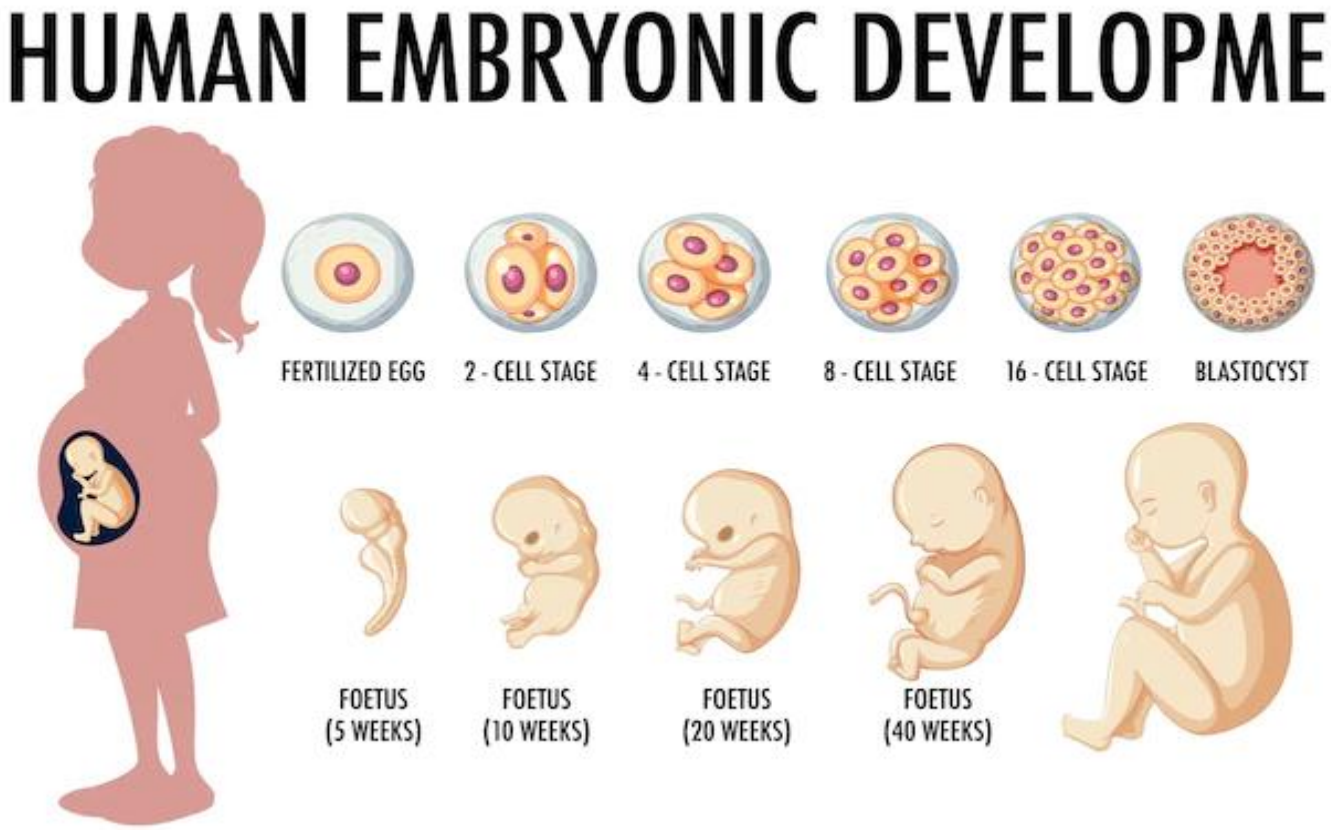
The blood vessel that will become the heart start to pulse. During the fifth week, buds that will form the arms and legs appear.

By the eighth week of development, the embryo has all of the basic organs and parts except those of the sex organs. At this point, the embryo weighs just one gram and is about one inch in length.

By the end of the embryonic period, the basic structures of the brain and central nervous system have been established. At this point, the basic structure of the peripheral nervous system is also defined.

Embryonic Stage

As neurons form, they migrate to different areas of the brain. Once they have reached the correct location, they begin to form connections with other neural cells, establishing rudimentary neural networks.



Foetal Stage

Once cell differentiation is mostly complete, the embryo enters the next stage and becomes known as a fetus.

The fetal period of prenatal develop marks more important changes in the brain.

This period of development begins during the ninth week and lasts until birth. This stage is marked by amazing change and growth.

The early body systems and structures established in the embryonic stage continue to develop.

The neural tube develops into the brain and spinal cord and neurons continue to form.

Once these neurons have formed, they begin to migrate to their correct locations. Synapses, or the connections between neurons, also begin to develop.

Foetal Stage

Between the ninth and twelfth week of gestation (at the earliest), reflexes begin to emerge. The fetus begins to make reflexive motions with its arms and legs.

During the third month of gestation, the sex organs begin to differentiate. By the end of the month, all parts of the body will be formed.

At this point, the fetus weighs around three ounces. The fetus continues to grow in both weight and length, although the majority of the physical growth occurs in the later stages of pregnancy.

The end of the third month also marks the end of the first trimester of pregnancy.

During the second trimester, or months four through six, the heartbeat grows stronger and other body systems become further developed.

Fingernails, hair, eyelashes, and toenails form.[5] Perhaps most noticeably, the fetus increases about six times in size.

Foetal Stage

So what's going on inside the brain during this important period of prenatal development? The brain and central nervous system also become more responsive during the second trimester. Around 28 weeks, the brain starts to mature faster, with an activity that greatly resembles that of a sleeping newborn.

During the period from seven months until birth, the fetus continues to develop, put on weight, and prepare for life outside the womb. The lungs begin to expand and contract, preparing the muscles for breathing.

Attitude of significant people

Pregnant women's attitudes towards their fetus over the course of the pregnancy were studied in relation to physiological events of pregnancy, namely seeing the fetus via ultrasound and experiencing fetal movement.

Two hypotheses were examined:

(a) women who have a negative attitude to pregnancy and motherhood have children who exhibit slower development at 2 years, compared with children of women who have more positive attitudes;

(b) women with poor psychological health antenatally have children who exhibit slower development at 2 years, compared with children of women who have good psychological health antenatally.

Attitude of significant people

Three aspects of child development were assessed: cognitive, motor and behaviour, as measured using the Bayley Scales of Infant Development.

Mothers who 'connect' with their baby during pregnancy are more likely to interact in a more positive way with their infant after it is born, according to a study carried out at the University of Cambridge. Interaction is important for helping infants learn and develop.

"Although we found a relationship between a mother's attitude towards her baby during pregnancy and her later interactions, this link was only modest. This suggests it is likely to be a part of the jigsaw, rather than the whole story."

Research has also shown that increased awareness of the baby during pregnancy is associated with healthy behaviours during pregnancy, such as giving up smoking or attending antenatal appointments.

Common physical hazards in prenatal Period

Period of the Zygote

a. Starvation

The zygote will die of starvation if it has too little yolk to keep it alive until it can lodge itself in the uterine wall or if it remains too long in the tube.

b. Lack of uterine preparation

Implantation cannot occur if, as a result of glandular imbalance, the uterine walls are not prepared in time to receive the zygote

c. Implantation in the wrong place

If the zygote becomes attached to a small fibroid tissue in the uterine wall or to the wall of the Fallopian tube, it cannot get nourishment and will die.

Common physical hazards in prenatal Period

Period of the Embryo

a. Miscarriages

Falls, emotional shocks, malnutrition, glandular disturbances, vitamin deficiency, and serious diseases such as pneumonia and diabetes, can cause the embryo to become dislodged from its place in the uterine wall, resulting in a miscarriage. Miscarriages that are due to unfavourable conditions in the prenatal environment are likely to occur between the tenth and eleventh week after conception.

b. Developmental Irregularities

Maternal malnutrition, vitamin and glandular deficiencies; excessive use of drugs, alcohol, and tobacco; and diseases, such as diabetes and German measles, interfere with normal development, especially that of the embryonic brain.

Common physical hazards in prenatal Period

Period of the Foetus

a. Miscarriages

Miscarriages are always possible upto the fifth month of pregnancy; the most vulnerable time is when the woman's menstrual period would normally occur.

b. Prematurity

Fetuses which weigh less than 1 kg have less chance of surviving than heavier fetuses and a greater chance of developing malformations.

c. Complications of Delivery

Maternal stress affects uterine contractions and is likely to lead to complications during birth.

d. Developmental irregularities

Any of the unfavourable environmental conditions present during the period of the embryo will also affect the development of fetal features and retard the whole pattern of fetal development.

Risk Factors

Risk Factors

- Age
- Nutrition
- Exercise
- Stress

Risk Factors

Age – Pregnancy most likely to result in a healthy baby if mother is in her 20's. – Older mothers have increased risk of miscarriage and stillbirth and are more liable to give birth to Down syndrome children. – Younger mother are at greater risk for inadequate diets and prenatal care and are more likely to have children with behavioral problems.

Risk Factors

Nutrition – Malnourished newborns have smaller brain cells and are more vulnerable to illnesses than well-nourished newborns. – Malnutrition in early prenatal development may lead to serious physical defects (e.g. folic acid) – Malnutrition in the last few months may lead to low birth weight and small heads.

Risk Factors

Exercise – Regular, moderate exercise is related to increased birth weight. – Frequent, vigorous exercise predicts lower birth weight.

Stress – In animals, stress results in smaller offspring prone to behavioral problems. – In humans, extreme maternal stress may be related to lower birth weight and children with emotional problems and behavioral disorders.

The case of low birth weight

Low birth weight is associated with:

– Caffeine, smoking, marijuana

– Stress, inadequate nutrition

– Premature birth

– “difficult” temperament

– Lagging cognitive development

– Unstable families

– Lagging social development

– Behavioral problems

Unit I - Infancy

PHYSICAL CHARACTERISTICS

FROM BIRTH-SIX MONTHS

- At birth, infants cannot control their body movements. Most of their movements are reflexes. Their nervous system is not fully developed.

- During the first months, infants can see clearly objects that are about 10 inches away from their faces. By six months, their vision is more fully developed.

- By four months, most babies have some control of their muscles and nervous system. They can sit with support, hold their head up for short periods of time, and can roll from their side to their stomach. By five months, most babies can roll over.

SIX-TWELVE MONTHS

- Infants still take a nap in the morning and afternoon. They start to eat and sleep at regular times.
- They eat three meals a day and drink from bottles at various times. They start using a cup and a spoon to feed themselves.

- Infants can sit alone. They crawl with their stomach touching the floor, and they creep on their hands and knees.

- By eight months, they can reach for and hold objects. They can pick up objects with their thumb and forefinger and let objects go (drop things).

- They start to throw things. They pull up to stand, they stand holding onto furniture, and they can walk when led.

- By the time they are 12 months old, most babies can weigh three times what they weighed at birth and gain about an inch per month in length. The average infant at one year may be between 26–30 inches long.

SOCIAL AND EMOTIONAL CHARACTERISTICS

BIRTH-SIX MONTHS

- They begin to develop trust as their parents meet their needs such as changing their diapers when needed, feeding them when they are hungry, and holding them when they cry.

- When frightened, infants cry and look surprised and afraid. They cry to express anger, pain and hunger. It is their way of communicating. They are easily excited or upset. They need to be cradled and comforted.

- Infants smile in response to a pleasant sound or a full stomach. At about six weeks, they smile in response to someone else. By four months, they smile broadly, laugh when pleased, and learn to recognize faces and voices of parents.

SIX-TWELVE MONTHS

- Infants respond when you say their name.
- They begin to fear strangers. They begin to fear being left by their parents.
- They get angry and frustrated when their needs are not met in a reasonable amount of time.

- Infants will talk to themselves in front of a mirror.
- They begin to learn what is and is not allowed.
- Eye contact begins to replace some of the physical contact that younger infants seek.

INTELLECTUAL CHARACTERISTICS

BIRTH-SIX MONTHS

- Infants babble, coo and gurgle.
- They study their hands and feet.
- They turn to locate the source of sounds.
- Infants can focus on and follow moving objects with their eyes.

- They explore things with their mouths. They put anything they can hold into their mouths.

- They cry in different ways to express hunger, anger and pain.

- They forget about objects that they cannot see.

SIX-TWELVE MONTHS

- Infants wave bye-bye. They respond to simple directions.
- Infants make sounds like "dada" and "mama."
- They make sounds that can be understood by people who know them well.

- They begin to pretend by acting out familiar activities.
- They repeat actions that cause a response.
- By 12 months, many infants speak their first understandable words.

Major Adjustments

Infants must make four major adjustments before they can resume their developmental progress.

If they do not make them quickly, their lives will be threatened. While these adjustments are being made, there is no developmental progress.

Instead, the infant remains on a plateau or may even regress to a lower stage of development.

These adjustments are described below:

1. Temperature Changes
2. Breathing
3. Sucking and Swallowing
4. Elimination

Temperature Changes

There is a constant temperature of 100 degrees F in the uterine sac, while temperatures in the hospital or home may vary from 60 to 70 degrees.

Breathing

When the umbilical cord is cut, infants must begin to breathe on their own.

Sucking and Swallowing

The infant must now get nourishment by sucking and swallowing, instead of receiving it through the umbilical cord. These reflexes are imperfectly developed at birth, and the infant often gets less nourishment than is needed and thus loses weight.

Elimination

The infant’s organs of elimination begin to work soon after birth; formerly, waste products were eliminated through the umbilical cord.

Every newborn infant finds adjustment to postnatal life difficult at first.

Some have trouble adjusting to temperature changes and develop colds, which may turn into pneumonia.

Others find breathing difficult and must be given oxygen.

Most choke when they attempt to suck and swallow, and many regurgitate more than they are able to retain, in which case they get less nourishment than they need to grow or even to retain their birth weight.

Few have any real trouble eliminating urine, but many have difficulties with fecal elimination.

Three common indications of the difficulty of adjusting to postnatal life are given below:

Loss of Weight

Because of difficulties in adjusting to sucking and swallowing, the newborn infant usually loses weight during the first week of postnatal life.

Disorganized Behavior

For the first day or two of postnatal life, all infants show relatively disorganized behaviour, such as irregularities in breathing rate, frequent urinations and defecations, wheezing, and regurgitation. This is due partly to pressure on the brain during birth, which results in a stunned state, and partly to the undeveloped state of the autonomic nervous system, which controls body homeostasis.

Infant Mortality

Even today, the rate of infant mortality during the first two days of postnatal life is high. The causes of infant mortality are many and varied.

Conditions Influencing Adjustment to Postnatal Life

Many conditions influence the success with which infants make the necessary adjustments to postnatal life.

The most important of these, as research to date indicates, are the kind of prenatal environment, the type of birth and experiences associated with it, the length of the gestation period, parental attitudes, and postnatal care.

Prenatal Environment

The first condition that influences the kind of adjustment infants make to postnatal life is the kind of prenatal environment they had. A healthy prenatal environment will contribute to good adjustments to postnatal life.

Kind of Birth

The second condition that influences the kind of adjustment that will be made to postnatal life is the kind of birth the infant experiences. Many traditional beliefs about birth and how it affects the individual's adjustments to life persist even today.

There are five kinds of birth, each with its distinctive characteristics. These are explained below:

Natural, or Spontaneous, Birth

In a natural birth, the position of the fetus and its size in relation to the mother's reproductive organs allow it to emerge in the normal, head-first position.

Breech Birth

In a breech birth, the back appear first, followed by the legs and finally the head.

Transverse Birth

In a transverse presentation, the fetus is positioned crosswise in the mother's uterus, Instruments must be used for delivery unless the position can be changed before the birth process begins.

Instrument Birth

When the fetus is too large to emerge spontaneously or when its position makes normal birth impossible, instruments must be used to aid in delivery.

Caesarean Section

If x-rays taken during the latter part of pregnancy indicate that complications may result if the infant emerges through the birth canal, the baby is brought into the world through a slit made surgically in the

The infant who has been born spontaneously usually adjusts more quickly and more successfully to the postnatal environment than one whose birth has been difficult enough to require use of instruments or caesarean section.

Babies born by caesarean section are the quietest, crying less than those born spontaneously or with the aid of instruments and showing greater lethargy and decreased reactivity.

As a result, they normally make better adjustments to their postnatal environment

HAZARDS OF INFANCY

- Physical Hazards
  - Prenatal environment
    - substance abuse, malnutrition
  - Type of birth & Complications
    - Vaginal delivery
      - breech, compound, instrumental (forceps)
    - Caesarian delivery
  - Multiple births
  - Postmaturity & prematurity

Stages of Labor

Stages	Characteristics
Stage 1: Effacement-thinning/shortening & dilatation of the cervix	•Produced by uterine contractions that force the amniotic sac against the cervical canal like a wedge, or if the membranes has ruptured, then pressure will be exerted by the presenting part of the fetus , usually the head •This stage ends when the cervix is fully dilated •Contractions beginabout10minutes apart
Stage 2: delivery of the fetus	•Also assisted by uterine contractions, but most important force provided by increased intra-abdominal pressure form contractions of abdominal muscles •Contractions may occur less than 1 minute apart and last from 30 to 90 seconds
Stage 3: delivery of the placenta & fetal membranes	•Uterine contractions & aided by increasing intra-abdominal pressure

Stages of Labor

- **1st Stage:** longest, about 12 hrs for primigravida
  - uterine contractions→ cervix dilates.

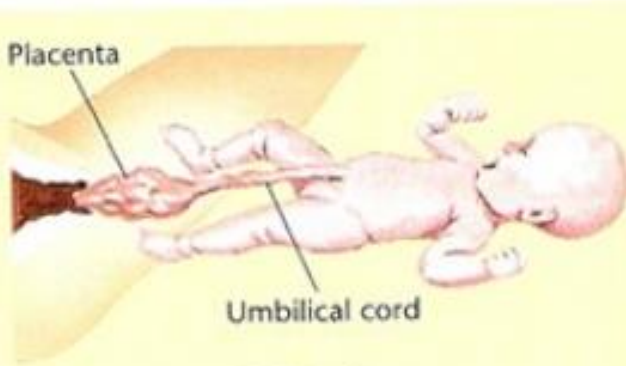
- **2nd Stage:** about 1 ½ hrs or less
  - babys head move thru cervix → vaginal canal→ emerge from mother's body → born → cut/clamp umbilical cord.

- **3rd stage:** about 5-30minutes
  - placenta & remaining cord expelled.

- **4th Stage:** after delivery; mother rests, monitor recovery

(a) First stage

(b) Second stage



(c) Third stage

Complications of Childbirth

- Birth Trauma

  - injury sustained at time of birth due to anoxia, diseases or infections or mechanical injury.

- Low Birthweigth/Maturity

  Weight: Low birthweigth = weigh less than 2,500 grams
  Very low birthweigth= weigh 1.500 grams or less
  Small-for-date: may/may not be preterm but weigh less
  Causes:
  1) demographic factors- race, age, education & status
  2) medical factors predating pregnancy- infections, bleeding
  3) prenatal behavioral & environmental factors- poor nutrition, inadequate prenatal care, smoking, alcohol & drug use, exposure to stress or to toxic substances.

  Maturity: Premature = born before 37th week of gestation
  Postmature= born 2-5 wks after due date or >42 weeks AOG
  *size complicates delivery

Effects of Prematurity

- Physical- smaller, "sickly"
- Developmental Lag- till 2-3 yrs old; slower to sit, stand, walk & talk
- Sensory Behavior- highly sensitive to noise, colors & moving objects
  → more distracted
- Motor control- awkward & poor posture
- Speech development- slower to develop, baby talk persist longer
- Intelligence- mental defects due to brain injury
- Socialization- poorer social adjustments, persist to adolescence
- Emotional behavior- common

Prematurity vs Postmaturity

PREMATURITY

- smaller
- developmental lag
- poor motor control
- delayed speech
- lower IQ
- poor socialization
- apathetic
- greater morbidity and mortality

POSTMATURITY

- bigger
- greater risk of physical trauma at birth
- hyper-reactive

Hazards of Infancy

- Psychological
  - Traditional beliefs
  - Helplessness
  - Individuality
  - Developmental lag
  - Plateau in development
  - Lack of stimulation
  - New parent blues
  - Names

Thank you