
Typical Human Development

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Agenda

- Key Terms
 - Principles of Development
 - Processes of Development
 - Periods of Development
 - Prenatal
 - Neonatal
 - Infant
 - Toddler
 - Preschool
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Key Words and Phrases

- Cephalocaudal
 - Proximodistal
 - Germinal stage
 - Embryonic stage
 - Fetal stage
 - Mitosis
 - Meiosis
 - Myelinization
 - Prenatal period
 - Neonatal period
 - Infancy period
 - Toddler period
 - Preschool period
 - Sensitive or critical periods
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Typical Development

■ Definitions:

- ❑ Development: a change that is cumulative and systematic
 - ❑ Refinement, improvement, expansion of existing skills
 - ❑ Development occurs when:
 - ❑ The change is orderly – not random
 - ❑ Consistent modification of behavior
 - ❑ Higher level of functioning
 - ❑ Development is either:
 - Qualitative: integration of complex processes
 - Quantitative: increases that are measurable
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Principals of development

- Differences exist:
 - Individual as well as inter-individual differences
 - Principals that apply to all children:
 - Progresses in a step by step pattern
 - Rates of development vary among children
 - Development is characterized by specificity of function as well as integration into a larger pattern
 - Neurological development follows a cephalocaudal and proximodistal direction
 - Development follows a sequential pattern
 - All development is interrelated
 - Development is influenced by heredity and environment
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Periods of Prenatal Development

- **Germinal Stage**
 - Last two weeks
- **Embryonic Stage**
 - 2nd to 8th week
- **Fetal Stage**
 - 8th to 9th week until birth (37 to 41 weeks)



Periods of Prenatal Development

Germinal stage

- ❑ Conception- zygote- morula- blastocyst (0-6 days)
 - At about 6 days, group of cells clumps to one side of the blastocyst creating the embryonic disk which is divided into 3 layers:
 - ❑ Ectoderm: epidermis, nails, hair, teeth, sensory organs, and central nervous system
 - ❑ Endoderm: digestive system, respiratory system and various other organs.
 - ❑ Mesoderm: dermis, muscles, connective tissue, skull, circulatory system, and reproductive system
- ❑ Once implantation into uterine lining is complete germinal stage is completed (approximately 2 weeks)

Periods of Prenatal Development

- Embryonic Stage: rapid growth stage for embryo (2nd week to approximately 8th week)
 - Embryo resembles human being
 - Head, brain, heart beat, skeleton, skin present
 - 1 and ½ inches long and weight 1/30 of an ounce
 - Extremely sensitive to toxic and infectious agents
 - Nearly all major birth defects occur during this time including deformed limbs, cleft palate, blindness, and deafness (see chart in Batshaw book, chapter 3)
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Periods of Prenatal Development

- Fetal Stage: begins with development of first bone cell at 8 or 9 weeks.
 - First trimester: 3 inches in length
 - Develops musculature
 - Other features include: eyelids, teeth fingernails, toenails, external genitalia,
 - Second trimester: 10 inches/ 1 to 1 1/2 pounds
 - Eyes can open, respiratory movements, eyebrows, hair, skin, movement
 - Prenatal surgery is able to correct certain abnormalities
 - Life outside uterus is possible
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Prenatal Surgery during Fetal Stage



Periods of Prenatal Development

- Third trimester: 20 inches/ 7 to 7 ½ pounds
 - Period of further growth and development
 - Greater structural differentiation
 - Respiratory and central nervous system are functional- child can survive outside the uterus
 - Growth continues to 37- 40 weeks
 - Birth Process:
 - Fetus rotates to head first position is first sign of labor
 - Many factors during the birth process can negatively impact the child
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Neonatal Period

- Transition time from intrauterine to independent existence
 - First 4 weeks after delivery
 - Most tenuous period in a human lifetime
 - Infants experience a greater risk during first 7 days of life than at any other time in life!
 - Characteristics:
 - Skeletal system not fully developed
 - Respiratory system adapting to gaseous environment
 - Digestive and circulatory system independent functioning
 - Olfaction, taste and tactile sensitivity- feeding
 - Motor skills are reflexive and random
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Infant Period

- From 4 weeks to two years of life
 - Rapid physical growth
 - Birth weight triples by end of first year
 - Gains 5 to 6 pounds a year for next several years
 - 10 inches in first year, and 3 inches for next several years
 - Head circumference increases 4 or 5 inches
 - Teeth erupt
 - Skeletal structure hardens
 - Development in nervous system seen in loss of reflexes and increasing gross motor to fine motor control
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Toddler Period

- Second and third years of life
 - First adolescence: links infancy to childhood
 - Slowing of physical development: 32-35 inches, 25-30 pounds
 - Bones calcify, brain continues to grow,
 - Motor skills improve: walking, jumping climbing
 - Memory and language skills develop
 - Social emotional development includes:
 - Exploratory egocentric play
 - Self-help and adaptive skills develop: toilet training
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Preschool Period

- Three to five years of age
 - Characterized by:
 - Refinement in growth patterns
 - Motor skills and physical structures
 - Self-help skills
 - Self confidence- willing to try new things
 - Improved speech and language skills
 - Social emotional development
 - Child to child interactions, fears, fantasies and self respect emerge
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Review

- Growth- addition of new components or skills through the appearance of new cells
 - Development- refers to the refinement, improvement, and expansion of existing skill through refinement of cells present
 - Maturation- refers to the unfolding of personal characteristics and behavioral phenomena through the process of growth and development.
 - Reflects the final stages of differentiation of cells, tissues and organs in accordance with a genetic blueprint, where full or optimal development is achieved.
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Reflection

- Why is it important as an early childhood special educator to be aware of typical human development?
 - What is one new thing you learned through this lecture?
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