

# Life-Span Development Thirteenth Edition

## Chapter 3: Prenatal Development and Birth

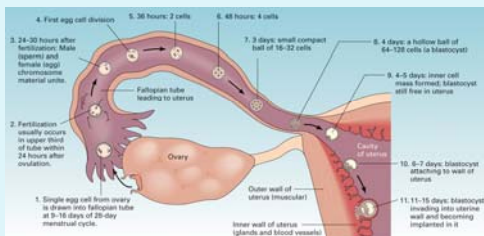
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### Prenatal Development

- Prenatal development is divided into 3 periods lasting approximately 38-40 weeks:
  - Germinal period: first 2 weeks after conception
    - Implantation
  - Embryonic period: 2 to 8 weeks after conception
    - Organogenesis
  - Fetal period: 2 months after conception until birth

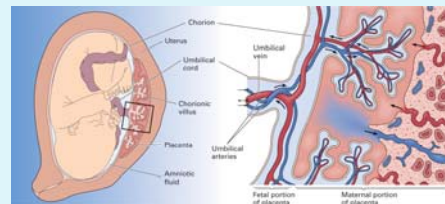
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### Prenatal Development



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## Prenatal Development

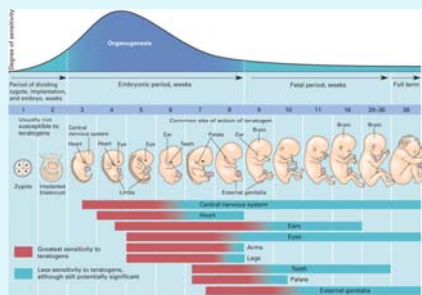
- The Brain:
  - Babies have approximately 100 billion *neurons* (nerve cells) at birth
- Birth defects related to the brain when neural tube fails to close
  - *Anencephaly*
  - *Spina bifida*
- In normal pregnancies, the neural tube closes creating
  - *Neurogenesis*: the generation of new neurons
  - *Neuronal migration*: cells move outward from their point of origin to their appropriate locations

## Prenatal Development

- Teratology and Hazards to Prenatal Development
  - Teratogen: any agent that can cause a birth defect or negatively alter cognitive and behavioral outcomes
    - Prescription and Nonprescription drugs
      - Psychoactive drugs
      - Fetal Alcohol Spectrum Disorders (FASD)
    - Incompatible blood types
    - Environmental hazards
    - Maternal diseases
    - Other parental factors

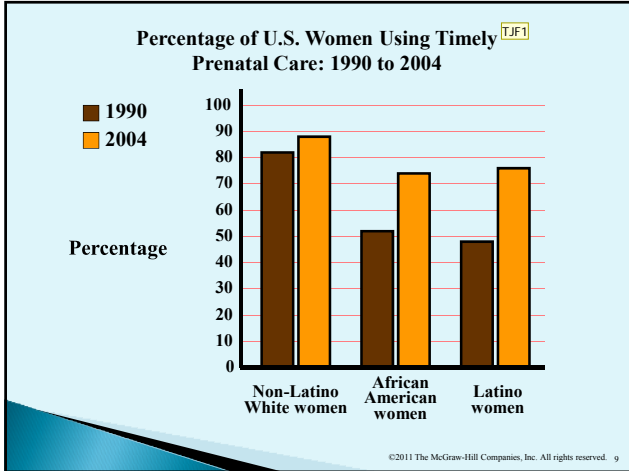
## Prenatal Development

Teratology and Hazards to Prenatal Development



## Prenatal Development

- Prenatal Care
  - Screening for manageable conditions and treatable diseases
  - Educational, social, and nutritional services
  - CenteringPregnancy: relationship-centered program provides complete prenatal care in a group setting
  - Home visitation – Nurse Family Partnership



## Birth

- The Birth Process
  - Stages of birth:
    - Stage 1: uterine contractions 15 to 20 minutes apart and last up to 1 minute
    - Stage 2: begins when the baby's head starts to move through the cervix and birth canal and ends when the baby completely emerges from the mother's body
    - Stage 3: afterbirth – umbilical cord, placenta, and other membranes are detached and expelled

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## Birth

- Childbirth Setting and Attendants:
  - In the U.S. 99% of deliveries take place in hospitals
  - In the U.S. 8% of births are attended by a midwife
  - In some countries, doulas provide continuous physical, emotional, and educational support for mothers before, during, and after childbirth

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## Birth

- Methods of Childbirth
  - Medications:
    - Analgesia
      - Demerol
    - Anesthesia
      - Epidural block
    - Oxytocin
      - Synthetic hormones used to stimulate contractions
  - Natural childbirth
  - Prepared Childbirth

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## Slide 9

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**TJF1** Not in chapter anymore. Still use?  
Thomas Finn, 7/19/2010

## Birth

### Other Methods of Childbirth

Waterbirth	Massage
Acupuncture	Hypnosis
Music therapy	Cesarean Delivery

## Birth

- Assessing the Newborn
- Measuring neonatal health and responsiveness:
  - Apgar Scale: assessed at 1 minute and 5 minutes after birth
    - A score of 0, 1, or 2 is given for each of the following: heart rate, body color, muscle tone, respiratory effort, and reflex irritability
  - 10 is highest, 3 or below indicates an emergency

## Birth

### Apgar Scale

Score	0	1	2
<b>Heart rate</b>	Absent	Slow—less than 100 beats per minute	Fast—100-140 beats per minute
<b>Respiratory effort</b>	No breathing for more than one minute	Irregular and slow	Good breathing with normal crying
<b>Muscle tone</b>	Limp and flaccid	Weak, inactive, but some flexion of extremities	Strong, active motion
<b>Body color</b>	Blue and pale	Body pink, but extremities blue	Entire body pink
<b>Reflex irritability</b>	No response	Grimace	Coughing, sneezing and crying



## Birth

- Assessing the Newborn
- Measuring neonatal health and responsiveness:
  - Brazelton Neonatal Behavioral Assessment Scale (NBAS):
    - Assesses newborn's neurological development, reflexes, and reactions to people and objects
  - Neonatal Intensive Care Unit Network Neurobehavioral Scale (NNNS):
    - Assesses newborn's behavior, neurological and stress responses, and regulatory capacities

## Birth

- Preterm and Low Birth Weight Infants
  - Preterm and Small for Date Infants:
    - Low birth weight infants weigh less than 5 ½ lbs. at birth
  - Preterm infants are those born three weeks or more before full term
  - Small for date infants are those whose birth weight is below normal when the length of the pregnancy is considered

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## Birth

- Preterm and Low Birth Weight Infants
  - Consequences of Preterm and Low Birth Weight Infants
    - Language development delays
    - Learning disabilities
    - ADHD
    - Asthma
    - Enrollment in special education programs

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## Birth

- Preterm and Low Birth Weight Infants
  - Kangaroo care and massage therapy
    - Kangaroo Care: treatment for preterm infants that involves skin to skin contact
    - Massage Therapy

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## The Postpartum Period

- *Postpartum period* lasts about six weeks or until the mother's body has completed its adjustment and has returned to a nearly pre-pregnant state
- Physical Adjustments:
  - Fatigue
  - Loss of Sleep
  - Hormone changes
  - Involution: the uterus returns to its pre-pregnant size

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## The Postpartum Period

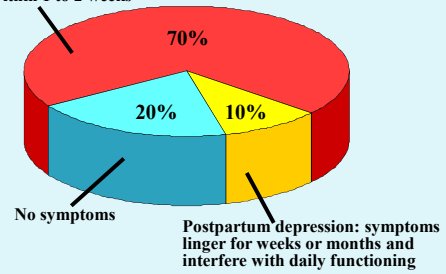
- Emotional and Psychological Adjustments
  - Emotional fluctuations are common
    - 70% of new mothers in the U.S. experience postpartum blues usually for 1-2 weeks
  - Postpartum Depression
    - Sadness, anxiety, and despair that lasts for two or more weeks
    - Antidepressants, psychotherapy, and exercise are used as treatments
  - Support by fathers is related to a lower incidence of postpartum depression in women

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## Percentage of U.S. Women Who Experience Postpartum Blues and Postpartum Depression

Postpartum blues: symptoms appear 2 to 3 days after delivery and subside within 1 to 2 weeks



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## The Postpartum Period

- Bonding: the formation of a connection, especially a physical bond, between parents and the newborn in the period shortly after birth
  - Isolation of premature babies and use of drugs in birth process may harm bonding process
  - Research does challenge the significance of the first few days of life as a critical period

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