Birth

What Happens during the birth process?

Stages of the Birth Process

1. **First stage**: Longest stage; lasts an average of 12 to 24 hours; uterine contractions increase in frequency and intensity as stage progresses. Contractions are about 15–20 minutes apart; occurring closer together as birth nears. Contractions dilate cervix to opening about 4 inches and allows baby to move from uterus to birth canal.

2. **Second stage**: Begins when baby’s head moves through cervix and birth canal and ends when baby completely emerges; typically lasts about 45 minutes to an hour. Mother pushes down, contractions come almost every minute.

3. **Third stage (afterbirth)**: Expelling of placenta, umbilical cord, and other membranes. Fastest stage; lasts only minutes

**Childbirth Setting and Attendants**—In the United States, 99% of births take place in hospitals, and more than 91% are attended by physicians. Compared to physicians, certified midwives generally spend more time with women during prenatal visits, place more emphasis on counseling and education, provide more emotional support, and are more likely to be with the woman one-on-one during the entire labor and delivery process. In many countries, a doula attends a childbearing woman. In many cultures, several people attend the mother during labor and delivery. Who helps during birth process varies across cultures? Some exclude fathers from process and some attended by family members or open to community.

1. **Midwives**: norm in most of world
   - 8% of U.S. births attended by midwives
   - U.S. certified nurse midwives spend more time with patients in prenatal visits
   - Place emphasis on counseling and education
   - Provide more emotional support to mother
   - Are present during entire birth process

2. **Doulas or caregivers**
   - Provide continuous physical, emotional, and educational support before, during, and after childbirth. Doulas remain with the mother throughout labor, assessing and responding to her needs. A recent study revealed that doula care was linked to improved childbirth outcomes, such as shorter labor, and higher rate of breast feeding.
   - Most in U.S. work independently, typically function as part of ‘birthing team’

**Methods of Childbirth**—U.S. hospitals often allow the mother and her obstetrician a range of options regarding method of delivery.

**Medication**—Three basic drugs are used for labor:

1. Analgesics are used to relieve pain—tranquilizers, barbiturates, narcotics
2. Anesthesia blocks sensation during labor and can be transmitted through the placenta to fetus
Epidural block: numbs from waist down—has been associated with fever, extended labor, and risk for c-section
3. Oxytocin is a synthetic hormone that stimulates contractions—Pitocin is the most widely used.

- Natural childbirth—Increased education on birthing without medication. Attempts to reduce mother’s pain by decreasing fear through breathing methods and relaxation techniques. This approach was developed in 1914 by English obstetrician Grantley Dick-Read. Dick-Read believed that the doctor’s relationship with the mother plays an important role in reducing her perception of pain and that the doctor should be present, providing reassurance, during her active labor prior to delivery
- Prepared childbirth (Lamaze)—Similar to natural childbirth; includes a special breathing technique to control pushing in the final stages of labor, as well as more detailed education about anatomy and physiology than Dick-Read’s approach provides.
- Other methods to reduce pain and stress during labor and childbirth
  1. Water birth—giving birth in a tub of water—lower incidence of episiotomies, fewer vaginal tears, and a lower rate of newborn complications.
  2. Massage—can reduce pain and anxiety during labor; reduces the incidence of perineal trauma (damage to genitalia) following birth.
  3. Acupuncture—can reduce the need for c-sections; it is linked with less use of pharmacological and invasive methods and higher Apgar scores at five minutes after birth; improved comfort during delivery
  4. Hypnosis—additional research is needed.
  5. Music therapy—helps reduce stress and manage pain.
- Cesarean—necessitated by baby’s position, mother’s condition, and/or physical capability. Baby removed from uterus through incision in abdomen when
  - Baby is in breech or crosswise position—can cause respiratory problems because the head is still in the uterus when the rest of the body is out. Can cause respiratory problems.
  - Head too large for mother’s pelvis
  - Vaginal bleeding has occurred in pregnancy
  - 29.1% of U.S. births are C-sections
  - Compared with vaginal births, they involve a higher infection rate, longer hospital stays, costs more, and there’s added stress.
- The Transition from Fetus/Newborn—Being born involves considerable stress for the baby. During each contraction when the placenta and umbilical cord are compressed as the uterine muscles draw together, the supply of oxygen is decreased. The baby has considerable capacity to withstand the stress of birth.
  a. Decreased oxygen supply during contractions is termed anoxia—insufficient oxygen to fetus/newborn. This occurs when delivery takes too long and can cause brain damage.
  b. Large quantities of adrenaline and hormones are secreted to protect the newborn.
c. Stress hormone secretion protects from oxygen deficiency, prepares infant for birth.

d. Vernix caseosa (skin grease) At the time of birth, the baby is covered with a protective skin grease called vernix caseosa which protects the baby against heat loss.

**WHAT ARE SOME MEASURES OF NEONATAL HEALTH AND RESPONSIVENESS?**

- **Apgar Scale**—The Apgar Scale is widely used to determine an infant’s immediate health status and evaluates infants’ heart rate, respiratory effort, muscle tone, body color, and reflex irritability.
  
  Widely used to assess health at 1 and 5 minutes after birth
  - Performed by nurse/obstetrician
  - Total score of 7 to 10 is good
  - A score of 5 indicates there may be developmental difficulties
  - Score below 3 signals emergency
  - Identifies high-risk infants

- **Brazelton Neonatal Behavioral Assessment Scale (NBAS)**—The NBAS assesses the newborn’s neurological development, reflexes, and reactions to people and is performed within 24 to 36 hours after birth. It is also used as a sensitive index of neurological competence in the weeks or months after birth.
  
  Performed within 24 to 36 hours after birth
  - Neurological development
  - Reflexes
  - Reactions to people
  
  Infant is active participant
  - Score based on best performance
  - “worrisome,” “normal,” and “superior” classifications

- **Neonatal Intensive Care Unit Network Neurobehavioral Scale (NNNS)**—The NNNS provides a more comprehensive analysis of the newborn’s behavior, stress responses, and regulatory capacities for at-risk infants.
  
  Offspring of NBAS; provides more comprehensive analysis of newborn behavior
  - Neurological and stress responses
  - Regulatory capacities
  - Assesses high-risk infants

**HOW DO LOW BIRTH WEIGHT AND PRETERM INFANTS DEVELOP?**

- Preterm and Small for Date Infants
  1. Low birth weight infants weigh less than 5.5 pounds at birth.
     - Very low-under 3 lbs.
     - Extremely low- under 2 lbs.
  2. Preterm infants are born three weeks or more before the pregnancy has reached its full term.
  3. Small for date infants are those whose birth weight is below normal when the length of the pregnancy is considered.

  The preterm birth rate has increased in the U.S. 12.8 % in 2006

  Factors include:
• number of births to women 35 years or older
• increase in multiple births
• increased substance abuse
• increased stress

• Consequences of Low Birth Weight—Although most low birth weight infants are normal and healthy, as a group they have more health and developmental problems than normal birth weight infants.
  • Survival rates for infants who are born very early and very small have risen, but with this improved survival rate have come increases in rates of severe brain damage.
  • Low birth weight infants are also more likely than normal birth weight infants to have lung or liver diseases.
  • At school age, children who were born low in birth weight are more likely than their normal birth weight counterparts to have a learning disability, attention deficit hyperactivity disorder, or breathing problems such as asthma.
  • Approximately 50% of all low birth weight children are enrolled in special education programs.

• Nurturing Preterm Infants—Intensive enrichment programs that provide medical and educational services for both the parents and children. The two most popular interventions currently are breastfeeding and kangaroo care, a way of holding a preterm infant so that there is skin-to-skin contact.
  Intensive enrichment programs can improve short-term outcomes
  Two most popular intervention programs
  • Kangaroo care – used by most NICU nurses; treatment for preterm infants that involves skin-to-skin contact.
  • Massage therapy – used by 37% of NICUs
  More touch promotes faster development

WHAT HAPPENS DURING THE POSTPARTUM PERIOD?
Postpartum period—The 6-week period following birth in which the mother adjusts physically and psychologically to the birth process. Involves great deal of adjustment and adaptation; family-centered approach appears best.

• Physical Adjustments—Involution is the process by which the uterus returns to its prepregnancy size in the five to six weeks after birth. Exercise can also help mothers recover former body contour and strength, and relaxation techniques may also be helpful.
  Bodily changes
  • Estrogen and progesterone levels drop. When the placenta is delivered, estrogen and progesterone levels drop steeply and remain low until the ovaries start producing hormones again.
  • Fatigue is common
  • Bodily functions return in a few weeks
• Involution—the process by which the uterus returns to its prepregnant size five or six weeks after birth. Immediately following birth, the uterus weighs 2 to 3 pounds. By the end of five or six weeks, the uterus weighs 2 to 3 ½ ounces. Nursing the baby helps contract the uterus at a rapid rate.

• Emotional and Psychological Adjustments—Emotional fluctuations are common for mothers in the postpartum period and may be due to hormonal changes, fatigue, inexperience or lack of confidence with newborns, and/or the extensive time and demands involved in caring for a newborn.

'Baby Blues’

Begin days after birth; they begin to feel depressed, anxious, and upset. These feelings may come and go for several weeks after the birth, often peaking about three to five days after birth. Indications of a need for professional counseling about postpartum adaptation include excessive worrying, depression, extreme changes in appetite, crying spells, and inability to sleep.

Postpartum depression

Major depressive episode occurs about 4 weeks after delivery: feelings of anxiety, depression, and despair

Gets worse without treatment

Postpartum depression treatments

Antidepressants

Psychotherapy; cognitive therapy is best

Postpartum depression affects

Mother-infant interaction

Risk of additional psychological disorders

Father’s adjustment

Experience considerable adjustment and stress

• Attention for infant decreases couple’s time

Father’s postpartum reactions: prenatal involvement can lessen feelings of depression. The father’s support and caring can play a role in whether the mother develops postpartum depression. A recent study revealed that higher support by fathers was related to a lower incidence of postpartum depression in women.

• Bonding—The formation of a connection, especially a physical bond, between parents and the newborn in the period shortly after birth. Research is conflicted on the importance of bonding in the first several days after birth.

– Encouraged by many doctors: “rooming in”

– Little evidence for a critical bonding period, but parents enjoy and can be helpful

– Parent-child interaction climate improved