CHAPTER 4
Birth and Physical Development during the First Three Years

The Birth Process

Labor is an apt term for the process of giving birth. Birth is hard work for both mother and baby. What brings on labor is a series of uterine, cervical, and other changes called parturition.

Parturition is the act or process of giving birth, and it typically begins about 2 weeks before delivery, when sharply rising estrogen levels stimulate the uterus to contract and the cervix to become more flexible.

A woman may have felt false contractions (known as **Braxton-Hicks** contractions)

Stages of Childbirth

Stage 1: Dilation of the Cervix. The first stage, dilation of the cervix, is the longest, typically lasting 12 to 14 hours for a woman having her first child. In subsequent births, the first stage tends to be shorter. During this stage, regular and increasingly frequent uterine contractions—15 to 20 minutes apart at first—cause the cervix to shorten and dilate, or widen, in preparation for delivery.

Stage 2: Descent and Emergence of the Baby. The second stage, descent and emergence of the baby, typically lasts up to an hour or two. It begins when the baby's head begins to move through the cervix into the vaginal canal, and it ends when the baby emerges completely from the mother's body. If this stage lasts longer than 2 hours, signaling that the baby may need help, a doctor may grasp the baby's head with forceps or, more often, use vacuum extraction with a suction cup to pull the baby out of the mother's body

Stage 3: Expulsion of the Placenta. The third stage, expulsion of the placenta, lasts between 10 minutes and 1 hour. During this stage, the placenta and the remainder of the umbilical cord are expelled from the mother.

Electronic Fetal Monitoring – a mechanical monitoring of fetal heartbeat during labor and delivery.

Vaginal versus Cesarean Delivery

- The usual method of childbirth, previously described, is vaginal delivery. Alternatively, cesarean delivery can be used to surgically remove the baby from the uterus through an incision in the mother's abdomen.
- Often a cesarean is needed when the fetus is in the breech position (feet or buttocks first) or in the transverse position (lying crosswise in the uterus) or when the head is too big to pass through the mother's pelvis.

Medicated versus Nonmedicated Delivery

- During the twentieth century, several alternative methods of natural childbirth or prepared childbirth were developed. These methods minimize or eliminate the use of drugs that may pose risks for babies and enable both parents to participate fully in a natural, empowering experience.

Natural Childbirth
Method of childbirth that seeks to prevent pain by eliminating the mother's fear through education about the physiology of reproduction and training in breathing and relaxation during delivery.

Prepared Childbirth
Method of childbirth that uses instruction, breathing exercises, and social support to induce controlled physical responses to uterine contractions and reduce fear and pain.

The **Lamaze method**, introduced by the French obstetrician Fernand Lamaze in the late 1950s, acknowledges that labor is painful and teaches expectant mothers to work actively with their bodies through controlled breathing.

Using the **LeBoyer method**, introduced in the 1970s, a woman gives birth in a quiet room under low lights to reduce stress, and the newborn is gently massaged to ease crying.

Another technique, developed by the French physician Michael Odent, is submersion of the laboring mother in a soothing pool of water. Other methods use mental imagery, massage, gentle pushing, and

deep breathing. Perhaps most extreme is the Bradley method, which rejects all obstetrical procedures and other medical interventions.

Doula - an experienced mentor who furnishes emotional support and information for a woman during labor.

The Newborn Baby

Neonatal Period – the first 4 weeks of life, a time of transition from intrauterine dependency to independent existence.
Neonate - newborn baby, up to 4 weeks old.

Size and Appearance

- At birth, 95 percent of full-term babies weigh between 5½ and 10 pounds and are between 18 and 22 inches long.
- Boys tend to be slightly longer and heavier than girls, and a firstborn child is likely to weigh less at birth than laterborns.
- In their first few days, neonates lose as much as 10 percent of their body weight, primarily because of a loss of fluids. They begin to gain weight again at about the 5th day and are generally back to birth weight by the 10th to the 14th day.
- New babies have distinctive features, including a large head (one-fourth the body length) and a receding chin (which makes it easier to nurse).
- Newborn infants also have fontanels where the bones of the skull do not meet. Many people refer to these holes as soft spots. Fontanels are covered by a tough membrane that allows for flexibility in shape, which eases the passage of the neonate through the vaginal canal.
- In the first 18 months of life, the plates of the skull gradually fuse together.
- Many newborns have a pinkish cast; their skin is so thin that it barely covers the capillaries through which blood flows.
- During the first few days, some neonates are very hairy because some of the lanugo, a fuzzy prenatal hair, has not yet fallen off. Almost all new babies are covered with vernix caseosa ("cheesy varnish"), an oily protection against infection that dries within the first few days.
- "Witch's milk," a secretion that sometimes leaks from the swollen breasts of newborn boys and girls around the 3rd day of life, was believed during the middle Ages to have special healing powers.
- A newborn, especially if premature, also may have swollen genitals

Body Systems

After birth, all of the baby's systems and functions must operate on their own. Most of the work of this transition occurs during the first 4 to 6 hours after delivery.

- If a neonate does not begin breathing within about 5 minutes, the baby may suffer permanent brain injury caused by **anoxia, lack of oxygen**, or **hypoxia, a reduced oxygen supply**.
- This form of birth trauma can leave permanent brain damage, causing mental retardation, behavior problems, or even death.
- **Neonatal Jaundice Condition**, in many newborn babies caused by immaturity of liver and evidenced by yellowish appearance; can cause brain damage if not treated promptly.

Medical and Behavioral Assessment

Apgar Scale

- Standard measurement of a newborn's condition; it assesses appearance, pulse, grimace, activity, and respiration.
- A 5-minute score of 7 to 10—achieved by 98.4 percent of babies born in the United States—indicates that the baby is in good to excellent condition (Martin, Hamilton, et al., 2009). A score below 5–7 means the baby needs help to establish breathing; a score below 4 means the baby needs immediate lifesaving treatment. If resuscitation is successful, bringing the baby's score to 4 or more at 10 minutes, no long-term damage is likely to result.

Brazelton Neonatal Behavioral Assessment Scale (NBAS)

- Neurological and behavioral test to measure neonate's responses to the environment.
- It assesses motor organization, as shown by such behaviors as activity level and the ability to bring a hand to the mouth; reflexes; state changes, such as irritability, excitability, and ability to

quiet down after being upset; attention and interactive capacities, as shown by general alertness and response to visual and auditory stimuli; and indications of central nervous system instability, such as tremors and changes in skin color. The NBAS takes about 30 minutes, and scores are based on a baby's best performance.

Neonatal Screening for Medical Conditions

- Children who inherit the enzyme disorder phenylketonuria, or PKU, will become mentally retarded unless they are fed a special diet beginning in the first 3 to 6 weeks of life (National Institute of Child Health and Human Development, 2010). Screening tests administered soon after birth often can discover this and other correctable defects.

State of Arousal

- An infant's physiological and behavioral status at a given moment in the periodic daily cycle of wakefulness, sleep, and activity.

Babies also have an internal clock that regulates their daily cycles of eating, sleeping, and elimination and perhaps even their moods. These periodic cycles of wakefulness, sleep, and activity, which govern an infant's state of arousal, or degree of alertness (Table 2), seem to be inborn and highly individual. Changes in state are coordinated by multiple areas of the brain and are accompanied by changes in the functioning of virtually all body systems (Ingersoll & Thoman, 1999; Scher, Epstein, & Tirosh, 2004). Most new babies sleep about 75 percent of their time—up to 18 hours a day—but wake up every 3 to 4 hours, day and night, for feeding.

TABLE 2 States of Arousal in Infancy

State	Eyes	Breathing	Movements	Responsiveness
Regular sleep	Closed; no eye movement	Regular and slow	None, except for sudden, generalized startles	Cannot be aroused by mild stimuli.
Irregular sleep	Closed; occasional rapid eye movements	Irregular	Muscles twitch, but no major movements	Sounds or light bring smiles or grimaces in sleep.
Drowsiness	Open or closed	Irregular	Somewhat active	May smile, startle, suck, or have erections in response to stimuli.
Alert inactivity	Open	Even	Quiet; may move head, limbs, and trunk while looking around	An interesting environment (with people or things to watch) may initiate or maintain this state.
Waking activity and crying	Open	Irregular	Much activity	External stimuli (such as hunger, cold, pain, being restrained, or being laid down) bring about more activity, perhaps starting with soft whimpering and gentle movements and turning into a rhythmic crescendo of crying or kicking, or perhaps beginning and enduring as uncoordinated thrashing and spasmodic screeching.

Complications of Childbirth

Low-birth-weight babies

- Weight of less than 5½ pounds (2,500 grams) at birth because of prematurity or being small-for-date.

Preterm (premature) infants

- Infants born before completing the 37th week of gestation.

Small-for-date (small-for- gestational age) infants

- Infants whose birth weight is less than that of 90 percent of babies of the same gestational age, as a result of slow fetal growth.

Who Is Likely to Have a Low-Birth-Weight Baby?

1. demographic and socioeconomic factors
2. medical factors predating the pregnancy
3. prenatal behavioral and environmental factor
4. medical conditions associated with the pregnancy

A low-birth-weight or at-risk preterm baby may be placed in an isolette (an antiseptic, temperature-controlled crib) and fed through tubes. To counteract the sensory impoverishment of life in an isolette, hospital workers and parents are encouraged to give these small babies special handling. Gentle massage seems to foster growth, weight gain, motor activity, alertness, and behavioral organization, as assessed by the Brazelton NBAS (T. Field, Diego, & Hernandez-Reif, 2007).

Kangaroo Care, a method of skin-to-skin contact in which a newborn is laid face down between the mother's breasts for an hour or so at a time after birth, can help preemies—and full-term infants—make the adjustment from fetal life to the jumble of sensory stimuli in the outside world. This soothing maternal contact seems to reduce stress on the central nervous system and help with self-regulation of sleep and activity (Ferber & Makhoul, 2004).

Can a supportive environment overcome effects of birth complications?

Protective factors Influences that reduce the impact of potentially negative influences and tend to predict positive outcomes:

1. individual attributes, such as energy, sociability, and intelligence;
2. affectionate ties with at least one supportive family member; and
3. rewards at school, work, or place of worship that provide a sense of meaning and control over one's life.

Postmaturity

Postmature

- A fetus not yet born as of 2 weeks after the due date or 42 weeks after the mother's last menstrual period.

Stillbirth

- Death of a fetus at or after the 20th week of gestation.
- Although the cause of stillbirth is often not clear, many stillborn fetuses are small for gestational age, indicating malnourishment in the womb.

Survival and Health

Infant mortality rate

- Proportion of babies born alive who die within the 1st year.

Sudden Infant Death Syndrome (SIDS) Sudden infant death syndrome (SIDS), sometimes called crib death, is the sudden death of an infant under age 1 in which the cause of death remains unexplained after a thorough investigation that includes an autopsy. SIDS is the leading cause of post neonatal infant death in the United States (Anderson & Smith, 2005).

About 90 percent of all injury deaths in infancy are due to one of four causes: suffocation, motor vehicle traffic, drowning, and residential fi res or burns (Pressley et al., 2007). Many of these accidental injuries occur at home. Some injuries reported as accidental may actually be inflicted by caregivers unable to cope with a crying baby.

Immunization for Better Health
Such once-familiar and sometimes fatal childhood illnesses as measles, pertussis (whooping cough), and polio are now largely preventable, thanks to the development of vaccines that mobilize the body's natural defenses. Unfortunately, many children still are not adequately protected.

EARLY PHYSICAL DEVELOPMENT

As before birth, physical growth and development follow the cephalocaudal principle and the proximodistal principle.

Cephalocaudal Principle

- Principle that development proceeds in a head-to-tail direction, that is, that upper parts of the body develop before lower parts of the trunk.

Proximodistal Principle

- Principle that development proceeds from within to without, that is, that parts of the body near the center develop before the extremities.

Growth Patterns

- Children grow faster during the first 3 years, especially during the first few months, than they ever will again.

Nutrition

- **Breast or Bottle?** Feeding a baby is an emotional as well as a physical act. Warm contact with the mother's body fosters emotional linkage between mother and baby. Such bonding can take place through either breast-feeding or bottle-feeding and through many other caregiving activities, most of which can be performed by fathers as well as mothers.
- Nutritionally speaking, however, breast-feeding is almost always best for infants— and mothers
- The only acceptable alternative to breast milk is an ironfortified formula that is based on either cow's milk or soy protein and contains supplemental vitamins and minerals. Infants weaned during the 1st year should receive ironfortified formula. At 1 year, babies can switch to cow's milk.

Other Nutritional Concerns Contrary to recommendations for earlier generations, healthy babies should consume nothing but breast milk or iron-fortified formula for the first 6 months. Pediatric experts recommend that iron-enriched solid foods—usually beginning with cereals—be introduced gradually during the second half of the 1st year. At this time, too, water may be introduced (AAP Section on Breastfeeding, 2005).

The Brain and Reflex Behavior

Central nervous system —the brain and spinal cord (a bundle of nerves running through the backbone)—and of a growing peripheral network of nerves extending to every part of the body. Through this network, sensory messages travel to the brain, and motor commands travel back.

The brain at birth is only about onefourth to one-third of its eventual adult volume (Toga, Thompson, & Sowell, 2006). By age 6, it is almost adult size, but specific parts of the brain continue to grow and develop functionally into adulthood. The brain's growth occurs in fits and starts called brain growth spurts. Different parts of the brain grow more rapidly at different times.

Major Parts of the Brain

- By birth, the growth spurt of the **spinal cord and brain stem** (the part of the brain responsible for such basic bodily functions as breathing, heart rate, body temperature, and the sleep-wake cycle).
- The **cerebellum** (the part of the brain that maintains balance and motor coordination) grows fastest during the 1st year of life.
- The **cerebrum**, the largest part of the brain, is divided into right and left halves, or hemispheres, each with specialized functions. This specialization of the hemispheres is called lateralization.

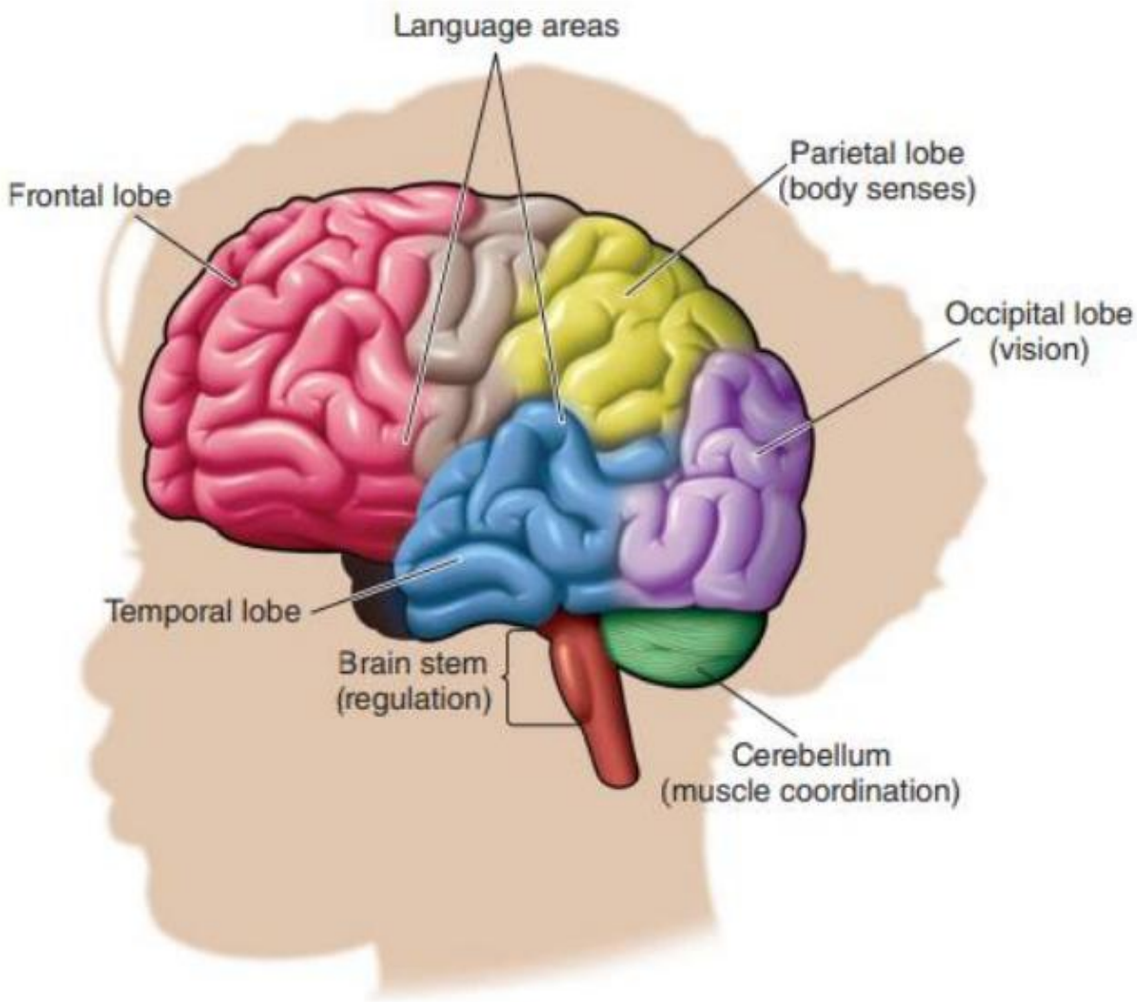
Lateralization - tendency of each of the brain's hemispheres to have specialized functions

The **left hemisphere** is mainly concerned with language and logical thinking, the **right hemisphere** with visual and spatial functions such as map reading and drawing.

Joining the two hemispheres is a tough band of tissue called the **corpus callosum**, which allows them to share information and coordinate commands. The corpus callosum grows dramatically during childhood,

reaching adult size by about age 10.

Each cerebral hemisphere has four lobes or sections, which control different functions. They include the **occipital**, **parietal, temporal,** and **frontal lobes**.



(1) The **occipital lobe** is the smallest of the four lobes and is primarily concerned with visual processing.
(2) The **parietal lobe** is involved with integrating sensory information from the body. It helps us move our bodies through space and manipulate objects in our world.
(3) The **temporal lobe** helps us interpret smells and sounds and is involved in memory.
(4) The **frontal lobes**, the newest region of the brain, are involved with a variety of higher-order processes, such as goal setting, inhibition, reasoning, planning, and problem solving.
(5) The regions of the **cerebral cortex** (the outer surface of the cerebrum) that govern vision, hearing, and other sensory information grow rapidly in the first few months after birth and are mature by age 6 months, but the areas of the **frontal cortex** responsible for abstract thought, mental associations, remembering, and deliberate motor responses grow very little during this period and remain immature for several years.

The brain growth spurt that begins at about the third trimester of gestation and continues until at least the 4th year of life is important to the development of neurological functioning. Smiling, babbling, crawling, walking, and talking—all the major sensory, motor, and cognitive milestones of infancy and toddlerhood— reflect the rapid development of the brain, particularly the cerebral cortex.

Brain Cells
The brain is composed of neurons and glial cells. **Neurons, or nerve cells**, send and receive information. **Glia, or glial cells**, nourish and protect the neurons. They are the support system for our neurons. Once in place, the neurons sprout **axons** and **dendrites** —narrow, branching, fiber like extensions. **Axons** send signals to other neurons, and dendrites receive incoming messages from them, through synapses, tiny gaps, which are bridged with the help of chemicals called neurotransmitters that are released by the neurons.

Integration – the process by which neurons coordinate the activities of muscle groups.
Differentiation – the process by which cells acquire specialized structures and functions.
Cell death – in brain development, normal elimination of excess brain cells to achieve more efficient functioning.
Myelination - the Process of coating neural pathways with a fatty substance called myelin, which enables faster communication between cells.

Early Reflexes

Reflex behaviors - automatic, involuntary, innate responses to stimulation.

Human infants have an estimated 27 major reflexes, many of which are present at birth or soon after.

- Primitive reflexes, such as **sucking, rooting** for the nipple, and the **Moro reflex** (a response to being startled or beginning to fall), are related to instinctive needs for survival and protection or may support the early connection to the caregiver.
- As the higher brain centers become active during the first 2 to 4 months, infants begin to show **postural reflexes**: reactions to changes in position or balance.
- **Locomotor reflexes**, such as the walking and swimming reflexes, resemble voluntary movements that do not appear until months after the reflexes have disappeared.

Molding the Brain: The Role of Experience

The physical architecture of our brain is a reflection of the experiences we have had throughout our life. Our brains are not static; rather, they are living, changeable organs that respond to environmental influences. The technical term for this malleability of the brain is plasticity. Plasticity may be an evolutionary mechanism to enable adaptation to environmental change.

Plasticity enables learning. Individual differences in intelligence may reflect differences in the brain's ability to develop neural connections in response to experience (Garlick, 2003). Early experience can have lasting effects on the capacity of the central nervous system to learn and store information.

Reflex	Stimulation	Baby's Behavior	Typical Age of Appearance	Typical Age of Disappearance
Moro	Baby is dropped or hears loud noise.	Extends legs, arms, and fingers, arches back, draws back head.	7th month of gestation	3 months
Darwinian (grasping)	Palm of baby's hand is stroked.	Makes strong fist; can be raised to standing position if both fists are closed around a stick.	7th month of gestation	4 months
Tonic neck	Baby is laid down on back.	Turns head to one side, assumes fencer position, extends arm and leg on preferred side, flexes opposite limbs.	7th month of gestation	5 months
Babkin	Both of baby's palms are stroked at once.	Mouth opens, eyes close, neck flexes, head tilts forward.	Birth	3 months
Babinski	Sole of baby's foot is stroked.	Toes fan out; foot twists in.	Birth	4 months
Rooting	Baby's cheek or lower lip is stroked with finger or nipple.	Head turns; mouth opens; sucking movements begin.	Birth	9 months
Walking	Baby is held under arms, with bare feet touching flat surface.	Makes steplike motions that look like well-coordinated walking.	1 month	4 months
Swimming	Baby is put into water face down.	Makes well-coordinated swimming movements.	1 month	4 months

Early Sensory Capacities

Touch and Pain
Touch is the first sense to develop, and for the first several months it is the most mature sensory system. When a newborn's cheek is stroked near the mouth, the baby responds by trying to find a nipple, an evolved survival mechanism (Rakison, 2005).
Smell and Taste

The senses of smell and taste also begin to develop in the womb. A preference for pleasant odors seems to be learned in utero and during the first few days after birth, and the odors transmitted through the mother's breast milk may further contribute to this learning. Newborns prefer sweet tastes to sour, bitter, or salty tastes (Haith, 1986).

Hearing

Hearing, too, is functional before birth; fetuses respond to sounds and seem to learn to recognize them. From an evolutionary perspective, early recognition of voices and language heard in the womb may lay the foundation for the relationship with the mother, which is critical to early survival because hearing is a key to language development, hearing impairments should be identified as early as possible.

Sight

Vision is the least developed sense at birth, perhaps because there is so little to see in the womb. From an evolutionary developmental perspective, the other senses, as we have pointed out, are more directly related to a newborn's survival. Visual perception and the ability to use visual information—identifying caregivers, finding food, and avoiding dangers—become more important as infants become more alert and active. **Binocular vision** —the use of both eyes to focus, enabling perception of depth and distance—usually does not develop until 4 or 5 months

Milestones of Motor Development

Systems of action

- Increasingly complex combinations of motor skills, which permit a wider or more precise range of movement and more control of the environment.

Denver Developmental Screening Test Screening test

- Given to children 1 month to 6 years old to determine whether they are developing normally.

Gross motor skills

- Physical skills that involve the large muscles.

Fine motor skills

- Physical skills that involve the small muscles and eye-hand coordination.

TABLE 5 Milestones of Motor Development

Skill	50 Percent	90 Percent
Rolling over	3.2 months	5.4 months
Grasping rattle	3.3 months	3.9 months
Sitting without support	5.9 months	6.8 months
Standing while holding on	7.2 months	8.5 months
Grasping with thumb and finger	8.2 months	10.2 months
Standing alone well	11.5 months	13.7 months
Walking well	12.3 months	14.9 months
Building tower of two cubes	14.8 months	20.6 months
Walking up steps	16.6 months	21.6 months
Jumping in place	23.8 months	2.4 years
Copying circle	3.4 years	4.0 years

Head Control. At birth, most infants can turn their heads from side to side while lying on their backs. When lying chest down, many can lift their heads enough to turn them. Within the first 2 to 3 months, they lift their heads higher and higher—sometimes to the point where they lose their balance and roll over on their backs. By 4 months, almost all infants can keep their heads erect while being held or supported in a sitting position.

Hand Control. Babies are born with a grasping reflex. If the palm of an infant's hand is stroked, the hand closes tightly. At about 3½ months, most infants can grasp an object of moderate size, such as a rattle, but have trouble holding a small object. Next, they begin to grasp objects with one hand and transfer them to the other, and then to hold (but not pick up) small objects.

Sometime between 7 and 11 months, their hands become coordinated enough to pick up a tiny object, such as a pea, using the pincer grasp. By 15 months, the average baby can build a tower of two cubes. A few months after the 3rd birthday, the average toddler can copy a circle fairly well.

Locomotion. After 3 months, the average infant begins to roll over deliberately (rather than accidentally, as before)—first from front to back and then from back to front. The average baby can sit without support by 6 months and can assume a sitting position without help by about 8½ months.

They learn to look to caregivers for clues as to whether a situation is secure or frightening—a skill known as **social referencing.**

Motor Development and Perception

Visual guidance

- Use of the eyes to guide movements of the hands or other parts of the body.

Depth perception

- Ability to perceive objects and surfaces threedimensionally.

Haptic perception

- Ability to acquire information about properties of objects, such as size, weight, and texture, by handling them.

Eleanor and James Gibson's Ecological Theory of Perception

In a classic experiment by Richard Walk and Eleanor Gibson (1961), 6-month-old babies were seated on top of a plexiglass tabletop laid over two ledges. Between the ledges was an apparent drop. This illusory drop was made more prominent by using both low light to minimize any reflection from the plexiglass and a bright checkerboard patterned cloth. From the far side of the table, the infants' mothers then beckoned their children. To the babies, it appeared that their mothers were asking them to crawl over a visual cliff —a steep drop down to the floor. Walk and Gibson wanted to know if babies would willingly crawl over the deep end of the visual cliff when urged to do so by their mothers.

Ecological Theory of Perception

- Theory developed by Eleanor and James Gibson, which describes developing motor and perceptual abilities as interdependent parts of a functional system that guides behavior in varying contexts

Instead of relying on solutions that previously worked, with experience babies learn to continually gauge their abilities and adjust their movements to meet the demands of their current environment. This process of "**learning to learn**" (Adolph, 2008, p. 214) is an outcome of both perception and action. It involves visual and manual exploration, testing alternatives, and flexible problem solving.

How Motor Development Occurs: Thelen's Dynamic Systems Theory

Traditionally, motor development was thought to be genetically determined and largely automatic. Presumably, the maturing brain would produce a predetermined set of motor abilities at the appropriate point in development. Today many developmental psychologists consider this view too simplistic. Instead, motor development is considered to be a continuous process of interaction between the baby and the environment (Thelen, 1995; Smith & Thelen, 2003).

Ester Thelen, in her influential **dynamic systems theory (DST)**, argued that "behavior emerges in the moment from the selforganization of multiple components" (Spencer et al., 2006, p. 1523). Infant and environment form an interconnected, dynamic system. Opportunities and constraints presented by the infant's physical characteristics, motivation, energy level, motor strength, and position in the environment at a particular moment in time affect whether and how an infant achieves a goal. Ultimately, a solution emerges as the baby explores various combinations of movements and assembles those that most efficiently contribute to that end. Furthermore, the solution must be flexible and subject to modification in changing circumstances. Rather than being solely in charge of it, the maturing brain is but one component of a dynamic process.

Cultural Influences on Motor Development

- Although motor development follows a virtuallyuniversal sequence, its pace does respond to certain cultural factors.

Some cultures actively encourage early development of motor skills. In many African and West Indian cultures in which infants show advanced motor development, adults use special handling routines, such as bouncing and stepping exercises, to strengthen babies' muscles. In one study, Jamaican infants,

whose mothers used such handling routines daily, sat, crawled, and walked earlier than English infants, whose mothers gave them no such special handling (Hopkins & Westra, 1988, 1990). On the other hand, some cultures discourage early motor development. Children of the Ache in eastern Paraguay do not begin to walk until age 18 to 20 months (H. Kaplan & Dove, 1987). Ache mothers pull their babies back to their laps when the infants begin to crawl away. The Ache mothers closely supervise their babies to protect them from the hazards of nomadic life. Yet, as 8- to 10-year-olds, Ache children climb tall trees, chop branches, and play in ways that enhance their motor skills (H. Kaplan & Dove, 1987). Normal development, then, need not follow the same timetable to reach the same destination.