Chapter 6 Outline

Growth and Nutrition

A. Patterns of Growth
   - Cephalocaudal principle: Development proceeds in a head to tail direction; upper parts of the body develop before lower parts.
   - Proximodistal principle: Development proceeds from within to without; parts near the center develop before the extremities.

B. Nourishment
   1. Breastfeeding: Benefits and Cautions
   2. Encouraging Breastfeeding
   3. Nutritional Concerns

II. The Brain and Reflex Behavior

   - Central nervous system: Brain and spinal cord.
   - Spinal cord: Bundle of nerves running through the backbone.

A. Building the Brain
   - Brain growth spurts: Periods of rapid brain growth and development.
   1. Major Parts of the Brain
      - Brain stem: Part of the brain responsible for basic body functions such as breathing, heart rate, body temperature and sleep-wake cycle. Major growth spurt has run its course by birth.
      - Cerebellum: Part of the brain that maintains balance and motor coordination; grows fastest during the first year of life.
      - Cerebrum: Largest part of the brain, divided into right and left halves or hemispheres. Left hemisphere - language and logical thinking. Right hemisphere - visual and spatial functioning.
      - Lateralization: Tendency of each of the brain’s hemispheres to have specialized functions.
      - Four lobes of the cerebral hemisphere:
         o Occipital: Processes visual information.
         o Parietal: Allows infant to receive touch sensations and spatial information.
         o Temporal: Helps with hearing and language.
         o Frontal: Develops gradually during the first year, permitting such higher-level functions such as speech and reasoning.
      - Cerebral cortex: Outer surface of the cerebrum.
   2. Brain Cells
      - Neurons: Nerve cells.
      - Glial cells: Supports and protects the neurons.
      - Axons: Narrow branching extension of the neuron that sends signals to other neurons.
• Dendrite: Narrow branching extension of the neuron that receives signals from other neurons.
• Synapses: Tiny gaps between neurons.
• Neurotransmitters: Chemicals that bridge the gap between synapses.
• Integration: Process by which neurons coordinate the activities of muscle groups.
• Differentiation: Process by which neurons acquire specialized structure and function.
• Cell death: Elimination of excess brain cells to achieve more efficient functioning.

3. Myelination
• Myelination: Process of coating neurons with a fatty substance (myelin) that enables signals to travel faster and move more smoothly, permitting faster communication between cells.

B. Early Reflexes
• Reflex behaviors: Automatic, involuntary, innate responses to stimulation.
• Primitive reflexes: Related to instinctive needs for survival and protection.
• Postural reflexes: Reactions to changes in position and balance.
• Locomotor reflexes: Walking and swimming reflexes.

C. Molding the Brain: The Role of Experience
• Plasticity: Modifiability or “molding” of the brain through experience.

III. Early Sensory Capacities
A. Touch and Pain

B. Smell and Taste

C. Hearing

D. Sight
• Binocular vision: The use of both eyes to focus, allowing perception of depth and distance; usually does not develop until 4 or 5 months.

IV. Motor Development
A. Milestones of Motor Development
• Systems of action: Increasingly complex combinations of skills, which permit a wider or more precise range of movement and more control of the environment.
• Pincer grasp: Thumb and index finger meet at the tips to form a circle, making it possible to pick up tiny objects.
• 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 skill that involve the large muscles.
• **Fine motor skills:** Physical skills that involve the small muscles and eye-hand coordination.
  1. **Head Control**
  2. **Hand Control**
  3. **Locomotion**
    - **Self-locomotion:** To move around under own power.
    - **Social referencing:** A skill in which children look to caregivers for clues as to whether a situation is secure or frightening.

**B. Motor Development and Perception**

- **Visual guidance:** Use of the eyes to guide the movement of the hands or other parts of the body.
- **Depth perception:** Ability to perceive objects and surfaces three dimensionally.
- **Kinetic Cues:** Cues produced by the object or the observer about an object’s movement.
- **Haptic perception:** Ability to acquire information by handling objects rather than just looking at them.

**C. Eleanor and James Gibson’s Ecological Theory of Perception**

- **Visual Cliff:** Apparatus designed to give an illusion of depth and used to assess depth perception in infants.
- **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.
- **Affordance:** In the Gibsons’ ecological theory of perception, the fit between a person’s physical attributes and capabilities and characteristics of the environment.

**D. How Motor Development Occurs: Thelen’s Dynamic Systems Theory**

- **Walking reflex:** Stepping movements a neonate makes when held upright with the feet touching a surface.
- **Dynamic Systems Theory (DST):** Behavior emerges in the movement from self-organization to multiple components.

**E. Cultural Influences on Motor Development**

**V. Health**

**A. Reducing Infant Mortality**

- **Infant mortality rate:** Proportion of babies born alive who die during the first year.
  1. **Racial/Ethnic Disparities in Infant Mortality**
  2. **Sudden Infant Death Syndrome (SIDS)**
    - **Sudden infant death syndrome:** Sudden and unexplained death of an apparently healthy infant.
3. Death from Injuries

B. Immunization for Better Health

VI. Maltreatment: Abuse and Neglect

- Maltreatment: Refusing to give proper care to children or deliberately harming children.
- Failure to thrive: Results from a combination of inadequate nutrition, disturbed interactions with parents, and other factors.

A. Maltreatment: Facts and Figures

- Physical abuse: Injury to the body through punching, beating, kicking, or burning.
- Neglect: Failure to meet a child’s basic needs.
- Sexual abuse: Any sexual activity involving a child and an older person.
- Emotional maltreatment: Includes rejection, terrorization, isolation, exploitation, degradation, ridicule, or failure to provide emotional support, love, and affection.

B. Contributing Factors: An Ecological View

1. Characteristics of Abusive and Neglectful Parents and Families
2. Community Characteristics and Cultural Values

C. Helping Families in Trouble

D. Long-term Effects of Maltreatment