Chapter 5

Concepts of Growth and Development
Growth and Development
class objectives

• Identify the principles of growth and development
• Explain the major theories of growth and development, including Piaget, Erikson and Kohlberg
• Describe the important aspects of growth and development for the infant, toddler, preschooler, school-age child and adolescent.
• Recognize the influence of nature and nurture in the development of children
• Apply concepts of growth and development to the care of children and their families
Developmental Periods

• Newborn (0 to 1 month old)
  – Prenatal influences on growth and development
• Infant (1 to 12 months of age)
• Toddler (1 to 3 years of age)
• Preschooler (3 to 6 years of age)
• School-age child (6 to 12 years of age)
• Adolescence (12 to 18 years of age)
• Influences on growth and development
Infant Developmental Milestones
General Guidelines

• **Growth**: *Refers to an increase in physical size.* Represents quantitative changes such as height, weight, blood pressure, number of words in vocabulary.

• **Development**: *Refers to an increase in capability or function.* Development unfolds in a predictable pattern, but at different rates dependent on the particular characteristics and experiences of each child.
General Principles of Growth and Development

• Growth and Development evolve over time
• Each Child displays a unique maturational pattern
• The sequence or order of skill performance is uniform among children
Predictable Pattern

- Cephalocaudal development
- Proximodistal development
FIGURE 5–1 In normal cephalocaudal growth, the child gains control of the head and neck before the trunk and limbs. In normal proximodistal growth, the child controls arm movements before hand movements. For example, the child reaches for objects before being able to grasp them. Children gain control of their hands before their fingers; that is, they can hold things with the entire hand before they can pick something up with just their fingers.
FIGURE 5–7  Body proportions at various ages.
Varying Rates

• Gross Motor, Fine Motor, Language, Social/personal

• Each child is an individual progressing at his/her own rate.
Developmental Milestones

- Developmental tasks achieved at predictable times during childhood, often used to measure roughly development.
  - Rolling over
  - Sitting
  - Walking
  - Talking
  - Pincer grasp
Developmental Milestones

- Rolls front to back
- Sits without support
- Walking
- Talking (3 words)
- Pincer grasp
- Object permanence
- Throw ball
- Kick a ball
Developmental milestones specific p.415
Major Theories of Development

• **Freud:** Theory of psychosexual development. Psychosexual focus to personality development

• **Erikson:** Theory of psychosocial development. Developmental challenges throughout life

• **Piaget:** Theory of cognitive development

• **Kohlberg:** Theory of moral development
Freud’s Theoretical Framework

• Psychosexual energy
• Three components of personality
  – Id
  – Ego
  – Superego
• Defense mechanisms
<table>
<thead>
<tr>
<th>DEFENSE MECHANISM</th>
<th>DEFINITION</th>
<th>EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>Return to an earlier behavior</td>
<td>A previously toilet trained child becomes incontinent when separated from parents during a hospitalization.</td>
</tr>
<tr>
<td>Repression</td>
<td>Involuntary forgetting of uncomfortable situations</td>
<td>An abused child cannot consciously recall episodes of abuse.</td>
</tr>
<tr>
<td>Rationalization</td>
<td>An attempt to make unacceptable feelings acceptable</td>
<td>A child explains hitting another because “he took my toy.”</td>
</tr>
<tr>
<td>Fantasy</td>
<td>A creation of the mind to help deal with unacceptable fear</td>
<td>A hospitalized child who is weak pretends to be Superman.</td>
</tr>
</tbody>
</table>
Freud’s Stages of Development

- Oral
- Anal
- Phallic
- Latency
- Genital
- Application to nursing care
Erikson’s Theoretical Framework

• Eight psychosocial stages
• Focus on lifespan development
• Developmental crises
• Healthy vs. unhealthy outcomes
Eight Stages of Development

<table>
<thead>
<tr>
<th>Stage</th>
<th>Trust vs. mistrust</th>
<th>Autonomy vs. shame, doubt</th>
<th>Initiative vs. guilt</th>
<th>Industry vs. inferiority</th>
<th>Identity vs. identity diffusion</th>
<th>Intimacy vs. isolation</th>
<th>Generativity vs. self-absorption</th>
<th>Integrity vs. disgust, despair</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Infancy</td>
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<td></td>
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<tr>
<td>II Early childhood</td>
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<tr>
<td>III Play age</td>
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<td>IV School age</td>
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<tr>
<td>V Adolescence</td>
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<td>VI Young adult</td>
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<tr>
<td>VII Adulthood</td>
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<td></td>
</tr>
<tr>
<td>VIII Mature age</td>
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</table>
Toddler Nursing applications

• Allow self-feeding opportunities
• Encourage child to remove and put on own clothes, brush teeth, or assist with hygiene
• Continue routine per home
• Offer choices between 2 acceptable alternatives. Do not ask open ended questions.
• If restraint for a procedure is necessary, proceed quickly, providing short explanations and comfort
Erikson’s Theory of Psychosocial Development

- Trust vs. Mistrust
- Autonomy vs. Shame and Doubt
- Initiative vs. Guilt
- Industry vs. Inferiority
- Identity vs. Confusion

- Birth-1 year
- 1-3 years
- 3-6 years
- 6-12 years
- 12-18 years
Pediatric Clinical Worksheet
submitted weekly to clinical instructor

- **GROWTH AND DEVELOPMENT:**
  
  Pt’s Eriksonian Growth and Development Stage for age:
  
  ____________________________________________________________________

  Pt’s actual Eriksonian stage_______________________

  Data to support your choice of developmental stage:
  
  ____________________________________________________________________

  ____________________________________________________________________
Infant’s Developmental task: Develop a sense of trust

• Establish trust in the people providing care that basic needs of food, clothing, touch, and comfort will be met
  – Hold child often
  – Offer comfort after painful procedures
  – Manage pain effectively
  – Support parents presence
  – Meet needs for hood and hygiene
Toddler (1-3 years)

- Developmental task: Controlling bodily excretions. Recognize feelings and needs of others.
- The child develops increasing independence and self direction in many spheres of life
Infant:  *Trust vs. Mistrust*
Pediatric Clinical Worksheet
submitted weekly to clinical instructor

• **GROWTH AND DEVELOPMENT:**
  Pt’s Eriksonian Growth and Development Stage for age:
  ______trust vs. mistrust________________________

  Pt’s actual Eriksonian stage_ trust vs. mistrust _______

  Data to support your choice of developmental stage:
  _____baby calms when parent is present. Baby calms when offered bottle. Pain symptoms decreased after tylenol dose. ______________
Preschool
3-6 years

• A time of new initiative and independence.
• Language skills are well developed, and the child is able to understand and speak clearly.
• Well-developed language, motor, and social skills. Work creatively together.
Preschool specific developmental milestones

• Throws a ball overhand
• Climbs well
• Uses scissors
• Draws a circle, square, cross, a six-part figure. Learns to tie shoes, buttons, brushes teeth
• ASSOCIATIVE PLAY
School Aged 6-12
Industry vs. Inferiority

• Developmental task: Development of new skills and interests and a focus on intellectual or cognitive pursuits. Child takes pride in accomplishments in sports, school, home, and community. Developing a sense of industry provides the child with purpose and confidence in his or her ability to be successful.
Adolescence 12-18 years
Identity vs. Role confusion

• In adolescence, as the body matures and thought processes become more complex, a new sense of identity or self is established. The adolescent tries out roles and examines what fits best for the self and family expectations.
FIGURE 5–2  Children exposed to pleasant stimulation and who receive positive feedback from an adult for engaging in activities will develop and refine their skills faster, demonstrating the importance of a nurturing environment. Group activities provide an opportunity for motor skill and psychosocial development. Which skills are being developed by children in this photograph?
Piaget’s Theory of Cognitive Development

- Qualitative changes in thought processes
- Assimilation
- Accommodation
- Developmental stages
Sensorimotor Period
(Birth to 2 years)

• Reflexive (birth to 1 month)
• Primary circular reactions (1 to 4 months)
• Secondary circular reactions (4 to 8 months)
• Coordination of secondary schemes (8 to 12 months)
  – Object permanence
Sensorimotor Period (Birth to 2 years) (continued)

- Tertiary circular reactions (12 to 18 months)
- Mental combinations (18 to 24 months)
- Application to nursing care
Preoperational Period (2 to 7 years)

- Preconceptual substage (2 to 4 years)
  - Egocentrism
- Intuitive substage (4 to 7 years)
  - Transductive reasoning
  - Magical thinking
- Centration and animism
- Application to nursing care
Concrete Operational Period
(7 to 11 years)

• Cause and effect thinking
• Reasoning tied to concrete experiences
• Conservation
• Application to nursing care
Formal Operational Period
(11 years and older)

• Mature thought
• Abstract thinking
• Alternative outcomes to problems
• Idealism
• Application to nursing care
Kohlberg’s Theory of Moral Development

• Cognitive development related to moral reasoning
• Preconventional stage (4 to 7 years)
• Conventional stage (7 to 11 years)
• Postconventional stage (12 years and older)
• Application to nursing care
# Other Theories of Personality Development

<table>
<thead>
<tr>
<th>Theory</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bandura</td>
<td>Social Learning Theory</td>
</tr>
<tr>
<td>Watson, Skinner, Pavlov</td>
<td>Behaviorism</td>
</tr>
<tr>
<td>Brofenbrenner</td>
<td>Ecologic Theory</td>
</tr>
<tr>
<td>Chess and Thomas</td>
<td>Temperment</td>
</tr>
<tr>
<td></td>
<td>“easy child”</td>
</tr>
<tr>
<td></td>
<td>“difficult child”</td>
</tr>
<tr>
<td></td>
<td>“slow to warm up child”</td>
</tr>
</tbody>
</table>
Interaction Theories Influencing Development

- Social learning
- Ecological
- Resiliency
Social Learning Theory

- Social exchange with parents, other adults, other children
- Modeling or imitation of behaviors
- Self-efficacy
- Influence of modeling and behavioral reinforcement
  – Behaviorism-stimulus and reinforcement
- Application to nursing care
Ecological Theory

- Importance of nature and nurture
- Interaction of child and environment
Bronfenbrenner’s ecologic theory of development views the individual as interacting within five levels or systems.

Ecological Theory (continued)

- Assessment of environmental systems
  - Microsystem
  - Mesosystem
  - Exosystem
  - Macrosystem
  - Chronosystem
- Application to nursing care
Resiliency Theory

- Developmental and situational stresses
- Healthy functioning
- Protective factors
- Risk factors
- Adjustment
- Adaptation
- Assessment
- Application to nursing care
Temperament

• Innate characteristics

• Patterns of response to stimuli
  – Easy temperament
  – Difficult temperament
  – Slow-to-warm-up temperament

• Dimensions of response
The "easy" child is generally moderate in activity; shows regularity in patterns of eating, sleeping, and elimination; and is usually positive in mood and when subjected to new stimuli. The easy child adapts to new situations and is able to accept rules and work well with others. About 40% of children in the New York Longitudinal Study displayed this personality type.

The "difficult" child displays irregular schedules for eating, sleeping, and elimination; adapts slowly to new situations and persons; and displays a predominantly negative mood. Intense reactions to the environment are common. About 10% of children in the New York Longitudinal Study displayed this personality type.

The "slow-to-warm-up" child has reactions of mild intensity and slow adaptability to new situations. The child displays initial withdrawal followed by gradual, quiet, and slow interaction with the environment. About 15% of children in the New York Longitudinal Study displayed this personality type.

The remaining 35% of children studied showed some characteristics of each personality type.
BOX 5–10  Nine Parameters of Personality—Chess and Thomas

1. **Activity level.** The degree of motion during eating, playing, sleeping, bathing. Scored as high, medium, or low.
2. **Rhythmicity.** The regularity of schedule maintained for sleep, hunger, elimination. Scored as regular, variable, or irregular.
3. **Approach or withdrawal.** The response to a new stimulus such as a food, activity, or person. Scored as approachable, variable, or withdrawn.
4. **Adaptability.** The degree of adaptation to new situations. Scored as adaptive, variable, or nonadaptive.
5. **Threshold of responsiveness.** The intensity of stimulation needed to elicit a response to sensory input, objects in the environment, or people. Scored as high, medium, or low.
6. **Intensity of reaction.** The degree of response to situations. Scored as positive, variable, or negative.
7. **Quality of mood.** The predominant mood during daily activity and in response to stimuli. Scored as positive, variable, or negative.
8. **Distractibility.** The ability of environmental stimuli to interfere with the child’s activity. Scored as distractible, variable, or nondistractible.
9. **Attention span and persistence.** The amount of time devoted to activities (compared with other children of the same age) and the degree of ability to stick with an activity in spite of obstacles. Scored as persistent, variable, or nonpersistent.

Assessment and Intervention

- Assessment of infant/child and parent
- Goodness of fit
- Parent education
- Strategies to improve fit
Newborn to 2-Month-Old Infant

• Cognitive development
  – Reflexive
  – Sensorimotor

• Psychosocial development
  – Trust
  – Parent-infant interaction

• Temperament
FIGURE 5–4 Note that the parent and infant faces are in the same plane. This “en face” position enables both to examine each other’s faces and establish eye contact, fostering attachment between parent and child.
Newborn to 2-Month-Old Infant (continued)

• Physical growth and development
  – Growth pattern
  – Milestones

• Application to nursing care
  – Healthy infant
  – High-risk infant
<table>
<thead>
<tr>
<th>STATE</th>
<th>DESCRIPTION</th>
<th>RECOMMENDED PARENTAL RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drowsiness or dozing</td>
<td>The baby’s eyes are open or closed but there is not concentration on surroundings; the eyelids flutter, extremities move slowly and occasional startles occur. The baby either transitions to deeper sleep or wakefulness.</td>
<td>Parents can provide a quiet place for sleep or encourage wakefulness if that is desired.</td>
</tr>
<tr>
<td>Quiet alert</td>
<td>The baby is wide awake, follows objects, sounds, and faces; there is minimal motor movement. The infant is learning from the environment and will look away every few seconds and then look back at the face or object of interest.</td>
<td>Parents can talk with, sing to, assume the en face position, or provide objects for the baby to look at.</td>
</tr>
<tr>
<td>Active alert</td>
<td>The baby is very active with movements of extremities and head; responds to all stimuli with movement.</td>
<td>Parents may swaddle or quiet the infant if desired or allow the baby to move about, understanding that either crying or settling into quiet alert will likely occur next.</td>
</tr>
<tr>
<td>Crying</td>
<td>The baby cries and has movements of extremities.</td>
<td>Parents can look for reasons for the crying and intervene to provide comfort. The baby may be tired and need swaddling, hungry, having gastric distress, wet, or cold. Sometimes the source of crying is not known and an episode of crying, while annoying to parents, may continue to occur.</td>
</tr>
</tbody>
</table>

**TABLE 5-9**  Physical Growth and Development Milestones During Infancy

<table>
<thead>
<tr>
<th>AGE</th>
<th>PHYSICAL GROWTH</th>
<th>FINE MOTOR ABILITY</th>
<th>GROSS MOTOR ABILITY</th>
<th>SENSORY ABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth to 1 month</td>
<td>Gains 5–7 oz (140–200 g)/week</td>
<td>Holds hand in fist (1)</td>
<td>Inborn reflexes such as startle</td>
<td>Prefers to look at faces and black-and-white</td>
</tr>
<tr>
<td></td>
<td>Grows 1.5 cm (1/2 in.) in first month</td>
<td>Draws arms and legs to body when</td>
<td>and rooting are predominant activity</td>
<td>geometric designs</td>
</tr>
<tr>
<td></td>
<td>Head circumference increases</td>
<td>crying</td>
<td>May lift head briefly if prone (2)</td>
<td>Follows objects in line of vision (4)</td>
</tr>
<tr>
<td></td>
<td>1.5 cm (1/2 in.)/month</td>
<td></td>
<td>Alerts to high-pitched voices</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Comforts with touch (3)</td>
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</tr>
</tbody>
</table>

(1) Holds hand in fist
(2) May lift head
(3) Comforts with touch
(4) Follows objects
2- to 4-Month-Old Infant

• Cognitive development
• Psychosocial development
  – Trust
  – Attachment
  – Communication
  – Play
• Physical growth and development
  – Growth pattern
  – Milestones
2- to 4- Month-Old Infant (continued)

• Application to nursing care
### TABLE 5–9 (continued)  Physical Growth and Development Milestones During Infancy

<table>
<thead>
<tr>
<th>2–4 months</th>
<th>2–4 months</th>
<th>2–4 months</th>
<th>2–4 months</th>
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</thead>
<tbody>
<tr>
<td>Gains 5–7 oz (140–200 g)/week</td>
<td>Holds rattle when placed in hand (5)</td>
<td>Moro reflex fading in strength</td>
<td>Follows objects 180 degrees</td>
</tr>
<tr>
<td>Grows 1.5 cm (1/2 in.)/month</td>
<td>Looks at and plays with own fingers</td>
<td>Can turn from side to back and then return (6)</td>
<td>Turns head to look for voices and sounds</td>
</tr>
<tr>
<td>Head circumference increases 1.5 cm (1/2 in.)/month</td>
<td>Readily brings objects from hand to mouth</td>
<td>Decrease in head lag when pulled to sitting; sits with head held in midline with some bobbing</td>
<td></td>
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<tr>
<td>Posterior fontanel closes</td>
<td></td>
<td>When prone, holds head and supports weight on forearms (7)</td>
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<tr>
<td>Eats 120 mL/kg/24 hr (2 oz/lb/24 hr)</td>
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</table>

(5) Holds rattle  
(6) Can turn from side to back  
(7) Holds head up and supports weight on arms
4- to 6-Month-Old Infant

• Cognitive development
• Psychosocial development
  – Trust
  – Attachment
  – Communication
  – Play
• Physical growth and development
  – Growth pattern
  – Milestones
4- to 6-Month-Old Infant (continued)

- Application to nursing care
<table>
<thead>
<tr>
<th>AGE</th>
<th>PHYSICAL GROWTH</th>
<th>FINE MOTOR ABILITY</th>
<th>GROSS MOTOR ABILITY</th>
<th>SENSORY ABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>4–6 months</td>
<td>Gains 5–7 oz (140–200 g)/week</td>
<td>Grasps rattles and other objects at will; drops them to pick up another offered object <em>(8)</em></td>
<td>Head held steady when sitting</td>
<td>Examines complex visual images</td>
</tr>
<tr>
<td></td>
<td>Doubles birth weight 5–6 months</td>
<td>Mouths objects</td>
<td>No head lag when pulled to sitting</td>
<td>Watches the course of a falling object</td>
</tr>
<tr>
<td></td>
<td>Grows 1.5 cm (1/2 in.)/month</td>
<td>Holds feet and pulls to mouth</td>
<td>Turns from abdomen to back by 4 months and then back to abdomen by 6 months</td>
<td>Responds readily to sounds</td>
</tr>
<tr>
<td></td>
<td>Head circumference increases 1.5 cm (1/2 in.)/month</td>
<td>Holds bottle</td>
<td>When held standing supports much of own weight <em>(10)</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Teeth may begin erupting by 6 months</td>
<td>Grasps with whole hand (palmar grasp)</td>
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<tr>
<td></td>
<td>Eats 100 mL/kg/24 hr (1 1/2 oz/lb/24 hr)</td>
<td>Manipulates objects <em>(9)</em></td>
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</tbody>
</table>

*(8)* Grasps objects at will

*(9)* Manipulates objects

*(10)* Supports most of weight when held standing
6- to 8-Month-Old Infant

- Cognitive development
- Psychosocial development
  - Trust
  - Attachment
  - Communication
  - Play
- Physical growth and development
  - Growth pattern
  - Milestones
6- to 8-Month-Old Infant (continued)

• Application to nursing care
<table>
<thead>
<tr>
<th>6–8 months</th>
<th>Gains 3–5 oz (85–140 g)/week</th>
<th>Bangs objects held in hands</th>
<th>Most inborn reflexes extinguished</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grows 1 cm (3/8 in.)/month</td>
<td>Transfers objects from one hand to the other</td>
<td>Sits alone steadily without support by 8 months (11)</td>
</tr>
<tr>
<td></td>
<td>Growth rate slower than first 6 months</td>
<td>Beginning pincer grasp at times</td>
<td>Likes to bounce on legs when held in standing position</td>
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<td></td>
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<td></td>
<td>Recognizes own name and responds by looking and smiling</td>
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<td></td>
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<td></td>
<td>Enjoys small and complex objects at play</td>
</tr>
</tbody>
</table>

(11) Sits alone without support
8- to 10-Month-Old Infant

• Cognitive development
  – Object permanence emerges

• Psychosocial development
  – Trust
  – Attachment
  – Communication
  – Play
FIGURE 5–8  Garrett shows us that an 8-month-old child can play with blocks, demonstrating physical, cognitive, and social capabilities.
8- to 10-Month-Old Infant (continued)

• Physical growth and development
  – Growth pattern
  – Milestones

• Application to nursing care
### TABLE 5-9 (continued)  
**Physical Growth and Development Milestones During Infancy**

<table>
<thead>
<tr>
<th>AGE</th>
<th>PHYSICAL GROWTH</th>
<th>FINE MOTOR ABILITY</th>
<th>GROSS MOTOR ABILITY</th>
<th>SENSORY ABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>8–10 months</td>
<td>Gains 3–5 oz (85–140 g)/week</td>
<td>Picks up small objects (12)</td>
<td>Crawls or pulls whole body along floor by arms (13)</td>
<td>Understands words such as “no” and “cracker”</td>
</tr>
<tr>
<td></td>
<td>Grows 1 cm (3/8 in.)/month</td>
<td>Uses pincer grasp well (14)</td>
<td>Creeps by using hands and knees to keep trunk off floor</td>
<td>May say one word in addition to “mama” and “dada”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pulls self to standing and sitting by 10 months</td>
<td>Recognizes sound without difficulty</td>
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<td></td>
<td></td>
<td></td>
<td>Recovers balance when sitting</td>
<td></td>
</tr>
</tbody>
</table>

(12) Picks up small objects  
(13) Crawls or pulls body by arms  
(14) Uses pincer grasp well
10- to 12-Month-Old Infant

• Cognitive development
• Psychosocial development
  – Trust
  – Attachment
  – Communication
  – Play
• Physical growth and development
  – Growth pattern
  – Milestones
10- to 12-Month-Old Infant (continued)

- Application to nursing care
### TABLE 5–9 (continued)  Physical Growth and Development Milestones During Infancy

| 10–12 months | Gains 3–5 oz (85–140 g)/week  
Grows 1 cm (3/8 in.)/month  
Head circumference equals chest circumference  
Triples birth weight by 1 year | May hold crayon or pencil and make mark on paper  
Places objects into containers through holes (15) | Stands alone (16)  
Walks holding onto furniture  
Sits down from standing (17) | Plays peek-a-boo and patty cake |

(15) Places objects in container through holes  
(16) Stands alone  
(17) Sits down from standing
Toddler

• Cognitive development
  – Sensorimotor and preoperational thought
  – Object permanence well developed

• Psychosocial development
  – Independence, negativism, tantrums
  – Parallel play
  – Language milestones
Toddler: specific developmental milestones

• By age 3
  – Draws a circle
  – Learns to pour
  – Learns to dress himself
  – Jumps
  – Kicks a ball
  – Throws a ball overhand
  – Knows colors
  – Rides a tricycle

PARALLEL PLAY
<table>
<thead>
<tr>
<th>AGE</th>
<th>PLAY AND TOYS</th>
<th>COMMUNICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1–3 years</td>
<td>Refines fine motor skills by use of cloth books, large pencil and paper, wooden puzzles&lt;br&gt;Facilitates imitative behavior by playing kitchen, grocery shopping, toy telephone&lt;br&gt;Learns gross motor activities by riding Big Wheel tricycle, playing with soft ball and bat, molding water and sand, tossing ball or bean bag&lt;br&gt;Cognitive skills develop by educational television shows, music, stories and books</td>
<td>Increasingly enjoys talking&lt;br&gt;Exponential growth of vocabulary especially when spoken and read to&lt;br&gt;Needs to release stress by pounding board, frequent gross motor activities, and occasional temper tantrums&lt;br&gt;Likes contact with other children and learns interpersonal skills</td>
</tr>
</tbody>
</table>
FIGURE 5–10  A, Two children are displaying typical parallel play since they enjoy playing near other children, but are not engaging in social interactions with each other. Which cognitive and motor skills are these children developing? B, Imitative play such as pushing and pulling a vacuum allows this toddler to develop gross and fine motor skills.
FIGURE 5–10 (continued)  A, Two children are displaying typical parallel play since they enjoy playing near other children, but are not engaging in social interactions with each other. Which cognitive and motor skills are these children developing?  B, Imitative play such as pushing and pulling a vacuum allows this toddler to develop gross and fine motor skills.
Toddler: Physical Growth and Development

- Rate of growth slows during the second year of life.
- By age 2 years, the birth weight has quadrupled.
- By age 2 years, the child will be half the adult height.
Toddler (continued)

• Physical growth and development
  – Growth pattern
  – Milestones

• Application to nursing care
Toddler: specific developmental milestones

• By age 2
  – Turn pages of a board book easily one at a time
  – Going back and forth in a book to find favorite pictures
  – Carrying a book around the house
  – Build tower of 4 blocks
  – Scribbles on paper
  – Undresses self
  – Runs
  – Walks up and down stairs
  – Likes push/pull toys
  – Variable attention span
### TABLE 5-11  Physical Growth and Development Milestones During Toddlerhood

<table>
<thead>
<tr>
<th>AGE</th>
<th>PHYSICAL GROWTH</th>
<th>FINE MOTOR ABILITY</th>
<th>GROSS MOTOR ABILITY</th>
<th>SENSORY ABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1–2 years</td>
<td>Gains 8 oz (227 g) or more per month</td>
<td>By end of 2nd year, builds a tower of four blocks (1)</td>
<td>Runs: Walks up and down stairs (5)</td>
<td>Visual acuity 20/50</td>
</tr>
<tr>
<td></td>
<td>Grow: 3.5–5 in. (9–12 cm) during this year</td>
<td>Scribbles on paper (2)</td>
<td>Likes push and pull toys</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Anterior fontanel closes</td>
<td>Can undress self (3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Throws a ball</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2–3 years</td>
<td>Gains 1.4–2.3 kg (3–5 lb)/year</td>
<td>Draws a circle and other rudimentary forms</td>
<td>Jumps</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Grow: 6.5 in. (2–2.5 in.)/year</td>
<td>Learns to pour</td>
<td>Kicks ball</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Learning to dress self (4)</td>
<td>Throws ball overhand</td>
<td></td>
</tr>
</tbody>
</table>

1. Tower of four blocks
2. Scribbles on paper
3. Can undress self
4. Learning to dress self
5. Walks up and down stairs
Preschooler

• Cognitive development
  – Preoperational thought characteristics
  – Use of symbols

• Psychosocial development
  – Associative, dramatic, fine motor, and active play
  – Peers
  – Language skills
**TABLE 5–14** Psychosocial Development During Preschool Years

<table>
<thead>
<tr>
<th>AGE</th>
<th>PLAY AND TOYS</th>
<th>COMMUNICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>3–6 years</td>
<td>Associative play is facilitated by simple games, puzzles, nursery rhymes, songs</td>
<td>All parts of speech are developed and used, occasionally incorrectly</td>
</tr>
<tr>
<td></td>
<td>Dramatic play is fostered by dolls and doll clothes, play houses and hospitals, dress-up clothes, puppets</td>
<td>Communicates with a widening array of people</td>
</tr>
<tr>
<td></td>
<td>Stress is relieved by pens, paper, glue, scissors</td>
<td>Play with other children is a favorite activity</td>
</tr>
<tr>
<td></td>
<td>Cognitive growth is fostered by educational television shows, music, stories and books</td>
<td>Health professionals can</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt; Verbalize and explain procedures to children</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt; Use drawings and stories to explain care</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt; Use accurate names for bodily functions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt; Allow the child to talk, ask questions, and make choices</td>
</tr>
</tbody>
</table>
Preschoolers have well-developed language, motor, and social skills, and they can work creatively together on an art project, as this group is doing at an in-home childcare center.
Preschooler (continued)

• Physical growth and development
  – Growth pattern
  – Milestones

• Application to nursing care
<table>
<thead>
<tr>
<th>PHYSICAL GROWTH</th>
<th>FINE MOTOR ABILITY</th>
<th>GROSS MOTOR ABILITY</th>
<th>SENSORY ABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gains 1.5–2/5 kg (3–5 lb)/year</td>
<td>Uses scissors (1)</td>
<td>Throws a ball overhand</td>
<td>Visual acuity continues to improve</td>
</tr>
<tr>
<td>Grows 4–6 cm (1 1/2–2 1/2 in.)/year</td>
<td>Draws circle, square, cross (2)</td>
<td>Climbs well (6)</td>
<td>Can focus on and learn letters and numbers (8)</td>
</tr>
<tr>
<td></td>
<td>Draws at least a six-part person</td>
<td>Rides tricycle (7)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enjoys art projects such as pasting, stringing beads, using clay</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Learns to tie shoes at end of preschool years (3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buttons (4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Brushes teeth (5)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1) Uses scissors  
(2) Draws circle, square, cross  
(3) Ties shoes  
(4) Buttons clothes
(5) Brushes teeth
(6) Climbs well
(7) Rides bicycle or bicycle with training wheels
(8) Learns letters and numbers
School-Age Child

• Cognitive development
  – Concrete operations
  – Conservation

• Psychosocial development
  – Cooperative play
  – Peers and friends
  – Industry and achievement
  – Mature understanding of language
  – Sexuality
FIGURE 5–13  A, School-age children may take part in activities that require practice. This is a consideration when children are hospitalized and unable to practice or perform. Why? B, School-age children enjoy spending time with others the same age on projects and discussing the activities of the day. This is an important consideration when they are in an acute-care setting. When you are in the clinical setting, look for examples of this type of interaction taking place.
FIGURE 5–13 (continued)  A, School-age children may take part in activities that require practice. This is a consideration when children are hospitalized and unable to practice or perform. Why? B, School-age children enjoy spending time with others the same age on projects and discussing the activities of the day. This is an important consideration when they are in an acute-care setting. When you are in the clinical setting, look for examples of this type of interaction taking place.
School-Age Child (continued)

• Physical growth and development
  – Growth pattern
  – Milestones

• Application to nursing care
TABLE 5–15  Physical Growth and Development Milestones During the School-Age Years

<table>
<thead>
<tr>
<th>PHYSICAL GROWTH</th>
<th>FINE MOTOR ABILITY</th>
<th>GROSS MOTOR ABILITY</th>
<th>SENSORY ABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gains 1.4–2.2 kg (3–5 lb)/year</td>
<td>Enjoys craft projects</td>
<td>Rides two-wheeler (1)</td>
<td>Can read</td>
</tr>
<tr>
<td>Grows 4–6 cm (1 1/2–2 1/2 in.)/year</td>
<td>Plays card and board games</td>
<td>Jumps rope (2)</td>
<td>Able to concentrate for longer periods</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Roller skates or ice skates</td>
<td>on activities by filtering out surrounding</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>sounds (3)</td>
</tr>
</tbody>
</table>

(1) Rides two-wheeler
(2) Jumps rope
(3) Concentrates on activities for longer periods
Adolescence

• Cognitive development
  – Formal operations
  – Abstract thinking
Adolescence (continued)

- Psychosocial development
  - Independence
  - Identity
  - Peers
  - Language use
  - Exploration and rebellion
  - Need for privacy
  - Sexuality
Adolescence (continued)

• Physical growth and development
  – Growth pattern
  – Milestones

• Application to nursing care
PLAY

- Infant
- Toddler
- Preschooler
- School-aged
- Adolescent

- Reflexive
- Parallel
- Associative
- Cooperative
- Competative/Cooperative
Play Behavior: Infant

- Begins as reflex actions
- Moves to manipulative behavior
- Increasing the infant’s ability to move enlarges the sphere of play

*Play reflects every aspect of development and enhances learning*
5 week old infant on play mat
Play Behavior: Toddler

• Parallel Play: Occurs when children play side by side with similar or different toys, demonstrating little or no social interaction

• Physical skills: push, pull, climb, run, scribble, turn pages in a book.

• Cognitive skills: spatial relationships, imitation of adult activities
Parallel Play
Play Behavior: Preschool Child

- Associative Play: A type of play where children interact with one another, engaging in similar activities and participating in groups.
- Motor skills: swinging, riding a tricycle, throwing a ball.
- Dramatic play increases.
- Increased attention span.
Associative Play
Preschool
Play Behavior: School-aged child

- Cooperative Play: A type of play where children join into groups to achieve a goal or play a game
- Higher social component of play
- Able to understand and apply rules in play
- Hospitalized children experience separation and loss of peers
- Need concrete examples to accompany words
School aged children playing
Play Behavior: Adolescence

• Activities increase as adolescent becomes more independent
• Peer group becomes the focus of activities
• Boy-girl relationships are more common than at earlier stages.
Adolescents “playing”
How does development affect:

• Adjustment to Hospitalization?

• Understanding of death?

• Teaching/Learning?

• Perception of Pain?