



Supporting Physical Growth and Development in Young Children

Sean Brotherson

Family Science Specialist
NDSU Extension Service

Parents and caregivers have many ways to enrich a child's world and facilitate healthy physical development

Young children appreciate growth in their physical abilities. An infant smiles at being able to crawl across the room; a toddler enjoys rolling a ball back and forth with a parent; a kindergarten child loves to skip and dance when music is playing. For children to realize their physical abilities, parents and other adults also must appreciate the importance of steps in physical growth and do all they can to enhance a child's development.

The term **motor development** refers to growth in the ability of children to use their bodies and physical skills. The different domains of physical development generally fall into **gross-motor skills**, **fine-motor skills** and **balance/coordination skills**. This publication will discuss general patterns of physical development, which may vary based on a child's age, physical maturity and developmental context (presence of developmental delays, etc.).

Gross-motor Skills in Early Childhood

Gross-motor skills in early childhood relate to a child's development of large muscles and the ability to move from place to place or do physical activities that involve the large muscles of the body, arms and legs. Large-muscle development in young children is necessary for crawling, walking, lifting and other types of physical activities. Some things to remember about gross-motor skills in early childhood include:

- Different parts of a child's body grow at different rates. Large-muscle development occurs earliest, so gross-motor skills, such as reaching, waving arms and legs, crawling or walking, tend to appear first.
- Throughout the first year of life, most of the physical growth occurs in a child's torso (trunk of the body).
- Toddlers and preschoolers have a higher center of gravity. This means they are more prone

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North Dakota State University
Fargo, North Dakota 58105

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to falls because the legs and body are not yet developed in proportion to the upper body region. Give young children support as their large muscles in the lower body develop and eventually support them to sit or stand.

- By age 6, the child's body proportions are more like an adult's, with the center of gravity more centrally located to help them achieve a greater sense of physical balance.
- Most 3- and 4-year-old children are actively using their large muscles in running, wiggling and jumping. Their fine-motor skills, such as cutting, are not as developed. Since the large muscles develop first, providing opportunities for outdoor play and exercise or indoor running around is important.
- A variety of large-muscle activities is very important to parents, child-care programs and schools to give children a chance to develop and exercise large-muscle skills.

To get a sense of children's physical abilities related to gross-motor skills at different stages of early childhood, see **Checklist A – Gross-motor Skills in Early Childhood** (page 4).

Fine-motor Skills in Early Childhood

Fine-motor skills in early childhood relate to a child's development of small muscles and the ability to control use of the hands and feet, and do activities that involve the small muscles of the fingers, toes and other parts of the body. Small-muscle development in young children is necessary for physical activities such as grasping, cutting, throwing and drawing. Some things to remember about fine-motor skills in early childhood include:

- Small-muscle skills are different at different ages. Parents need to consider ability at different ages because asking a child to button a shirt at age 2 or 3 is difficult due to limited abilities.
- Three-year-olds do not have good small-muscle development yet, so the muscles in their hands and fingers are not strong enough to enable them to use scissors very well.
- Good precutting skills include crushing paper and then tearing paper.
- A child's interaction with the environment through exploration offers a critical opportunity for developing fine-motor skills. Child toys, cardboard books, balls and other objects a child can manipulate help them develop fine-motor skills. Parents and other adults should provide materials that children can shape, move and manipulate; allow children to make a mess; and assist them if they need help.

- Fine-motor skills develop quite a bit later than gross-motor skills, so children should not be expected to do things that involve fine-motor skills beyond their ability. Buttoning a coat or shirt, setting a table precisely or writing a note may involve fine-motor skills beyond the ability of a younger child. Parents and other adults should be attentive to their expectations of children and make sure they fit a child's fine-motor abilities.

To get a sense of children's physical abilities related to fine-motor skills at different stages of early childhood, see **Checklist B – Fine-motor Skills in Early Childhood** (page 4).

Balance and Coordination Skills in Early Childhood

Balance and coordination skills in early childhood relate to children's development of a sense of balance and the ability to coordinate movements so they can perform more complex physical activities. The development of balance and coordination skills in early childhood involves movement of the body in activities such as twisting, turning, pulling or maintaining stability. Balance and coordination skills are necessary for catching, clapping, eating, playing and other types of physical activities. Some things to remember about balance and coordination skills in early childhood include:

- Balance and coordination skills develop through time from a child's birth. Infants and

toddlers still are developing these skills, and this is partly why they cannot stop themselves from being unbalanced or falling when they first sit or stand. Adults need to provide support and safety for young children as they develop these skills through time. Different parts of a child's body grow at different rates.

- Coordination skills are important to a child's ability to interact and explore the environment. A child's ability to focus eyes on and reach for an object, which involves coordination, is important to playing, eating and other activities.
- Balance and coordination often involve using the hands and eyes at the same time. Activities such as painting, pasting, clay modeling, sorting small objects (such as buttons), building block towers, copying designs and drawing help a child learn to use (coordinate) the hands and eyes.
- Side-to-side or lateral movements used in painting, drawing or reading help a child develop left-to-right tracking (with the eyes and head). This ultimately will help develop hand-eye coordination and left-to-right tracking, which will help in learning to read.
- Repetition of physical activities, such as rolling a ball with a toddler or drawing pictures, helps a child develop balance and coordination skills. Parents and other adults should work actively with children to practice such repetition, which will strengthen their balance and coordination skills.

All of these physical skills, once developed, help individuals interact with the world around them and accomplish many daily tasks. Without these skills, such interaction would be impossible.

To get a sense of children's physical abilities related to balance and coordination skills at different stages of early childhood, see **Checklist C – Balance and Coordination Skills in Early Childhood** (page 5).

Activity No. 1 – The Handwriting Puzzle

Consider the skill of writing by hand. What physical skills must someone develop before mastering handwriting? Take out a pen or pencil and write your name and favorite place to visit below. Reflect on this skill. Select the six key physical and mental skills from the list below that are necessary for someone to have before he or she can master handwriting. Then check your choices against the answer key.

- Name
- What is your favorite place to visit?

Key Skills Need for Handwriting

- Large-muscle development
- Small-muscle development
- Eye tracking
- Rolling from front to back
- Pulling oneself to a standing position
- Eye-hand coordination
- Balance
- Hand preference
- Awareness of sensory stimulation
- Letter perception
- Ability to determine size of materials
- Spoken use of language
- Ability to hold a writing tool
- Ability to push and pull objects
- Ability to cut paper with scissors
- Copying shapes with a writing tool
- Ability to make basic strokes
- Pouring liquid from one container to another
- Ability to use spoon and fork
- Understanding of printed language

Answer Key

1. Small-muscle development;
2. Eye-hand coordination;
3. Ability to hold writing tool;
4. Ability to make basic strokes;
5. Letter perception; and
6. Understanding of printed language

✓ Checklist A

Gross-motor Skills in Early Childhood

0 to 3 Months

- Pushes up with arms while on tummy
- Kicks legs and waves arms
- Raises head while on tummy
- Rolls from side or tummy to back
- Holds head steady when supported in a sitting position

3 to 6 Months

- Rolls from back to side or tummy
- Sits alone
- Reaches for a parent with arms
- Tries to move toward a toy or object that is out of reach
- Scoots about on the floor

6 to 12 Months

- Crawls about on the floor
- Pulls self to a sitting position
- Pulls self up to stand next to a support (couch)
- Stands alone with support
- Takes steps alone with support, then without support

12 to 18 Months

- Walks alone without support
- Walks backward
- Crawls up stairs with support
- Throws a ball with overhand motion
- Kicks a ball with support
- Rolls a ball back to a person
- Imitates more complex motor skills, such as lifting objects, changing clothes, etc.

18 to 24 Months

- Runs fairly well
- Walks up stairs with support
- Kicks a ball
- Jumps in place
- Goes up and down a slide with help

2 to 3 Years

- Sits on or peddles a tricycle with support
- Runs with few falls or trips
- Walks up stairs while holding onto something
- Jumps over small obstacles
- Assists with household tasks or activities

3 to 5 Years

- Runs with energy and coordination
- Catches a ball with some practice
- Throws a ball 5 to 15 feet with overhand motion
- Walks up and down stairs alone
- Hops on one foot
- Rides a tricycle and steers well

5 to 7 Years

- Changes clothes without help
- Catches a ball bounced to them
- Runs easily and participates in games of tag, etc.
- Rides a bicycle with ability
- Kicks a ball with ability
- Carries out household tasks (cleaning room, making bed, etc.)

✓ Checklist B

Fine-motor Skills in Early Childhood

0 to 3 Months

- Grasps and holds an object, such as a baby ring or rattle
- Hands are held in open, relaxed position
- Clings to parent or adult with hands while being held

3 to 6 Months

- Reaches for dangling objects or toys
- Uses hands and fingers in play
- Grasps object using palm and fingers
- Passes a toy or object between hands
- Puts objects in mouth to explore

6 to 12 Months

- Uses a pincer grasp (thumb and finger) to hold food or object
- Grasps and uses toys to play or keep attention
- Reaches for objects, such as a spoon to feed self
- Plays hand games (patty-cake, etc.)

12 to 18 Months

- Scribbles on paper by grasping a pencil or crayon
- Picks up, grasps and throws a ball
- Stacks blocks together
- Puts large puzzle pieces into slots on a puzzle
- Holds objects and bangs them together

18 to 24 Months

- Grasps and uses spoon or fork to feed self with support
- Grasps and uses a cup or bottle for drinking
- Uses a pencil or crayon to draw lines
- Turns pages of a child's book with help

2 to 3 Years

- Uses utensils to feed self
- Brushes teeth with a toothbrush with help
- Uses basic scissors for cutting
- Holds and uses pencil or crayon for basic drawing
- Snaps, buttons or zips with help

3 to 5 Years

- Builds using blocks stacked on top of each other
- Cuts paper in shapes
- Draws with pencil, crayons, other implements
- Turns pages of a book
- Pours water from pitcher to cup

5 to 7 Years

- Draws multiple shapes and figures with various implements
- Strings beads for projects
- Uses a comb, toothbrush, washcloth without support
- Prints letters, numbers, etc.
- Cuts shapes clearly, easily

✓ Checklist C

Balance and Coordination Skills in Early Childhood

0 to 3 Months

- Looks at and focuses on parent
- Eyes follow parent
- Eyes follow parent and baby also moves head
- Kicks well and waves arms
- Positions well for breast or bottle feeding

3 to 6 Months

- Moves head or arms with some control and purpose
- Reaches intentionally to grasp a toy
- Eyes follow person or object that moves out of sight
- Holds two objects and hits them together

6 to 12 Months

- Turns head and eyes with control to respond
- Reaches for and grasps object easily
- Plays patty-cake with hands or claps
- Stacks items on top of each other
- Holds object with thumb and finger

12 to 18 Months

- Climbs onto a chair or sofa
- Pushes moveable toys about
- Holds a pencil or crayon and scribbles
- Plays peekaboo
- Drinks from a cup
- Grasps and uses a spoon

18 to 24 Months

- Jumps up and down in one spot
- Enjoys sensory activities with shapes, sizes, textures
- Hand-eye coordination developing with catching, throwing
- Takes off clothes
- Assists with simple household tasks

2 to 3 Years

- Jumps off a step without falling, maintains balance
- Uses spoon and fork for eating
- Participates in creative movement, such as dance, art, etc.
- Draws lines, shapes
- Builds structures with eight or more blocks

3 to 5 Years

- Marches or dances in rhythm to music
- Draws letters and numbers
- Holds fork or pencil with three fingers and not a fist
- Uses a toothbrush and floss alone
- Puts on and changes own clothes with some help as needed

5 to 7 Years

- Good balance and more smooth muscle coordination
- Handedness (left or right) develops
- Draws patterns and figures
- Puts together puzzles and games
- Ties shoes without help
- Plays a musical instrument with practice

Enhancing Physical Growth and Development

Parents and caregivers have many ways to enrich a child's world and facilitate healthy physical development. Some key things a child needs for this type of development are:

- **Variety of activities**
- **Useful and creative toys**
- **Interaction with adults and peers**

In physical development, children basically are learning how to control their bodies and move. Adults can help children by implementing the M-O-V-E formula for assisting kids with physical growth.

The M-O-V-E Formula for Physical Growth in Children

The principles of the M-O-V-E formula for assisting children with physical growth and development are as follows:

- **M**otivation
- **O**pportunity
- **V**ariety
- **E**quipment, encouragement and enthusiasm

To best follow these principles, parents and other adults need to ask simple questions about what they are doing to provide an environment that will assist physical growth and development.

Motivation

Children need some reason to be engaged in activities that will spur physical development. Often, the best motivation is simply to be with and play with a parent or other adult. Do you actively engage with children as they pursue physical play? Do you make physical activities fun for them?

Opportunity

Children need room to explore and materials they can interact with physically. Do you have a place for children to be physically active or sit and draw pictures? Are materials such as paper, crayons, scissors or modeling clay available and easily accessible to them? Do you have a bin with some balls and other physical toys with which children can play? Make certain you are providing the opportunity, including time, space and materials, for children to be physically engaged with their environment.

Variety

Children are naturally curious, so they need a variety of materials and physical activities available to them. Children also need a variety in what you offer them because different children may have differing interests. One child will want to play tag outside while another may wish to build a block tower. Children need to develop all aspects of their physical abilities, so engage them in a variety of activities that will help them use all of their muscles and skills.

Equipment, Encouragement and Enthusiasm

Equipment of different kinds is critical for helping young children develop physically. They need things to climb on, push, pull and use in other ways that challenge and stretch their large- and small-muscle skills. If you do not have outside equipment, take your children to facilities such as a local park or the YMCA to find opportunities to be active on child play equipment.

Encouragement and enthusiasm also are important building blocks for supporting a child's physical growth and development. Show children you enjoy interacting with them, and encourage them through praise and enthusiasm. For example, children engaged in physical sports, such as soccer or gymnastics, are more likely to continue if parents make time to give their attention and express their excitement at steps in a child's abilities. Give your children the encouragement and enthusiasm they need, and you will find enjoyment as you see them learn to use and develop their physical abilities in a variety of ways.

Recommended Resources

■ Books and Articles

- Bayley, N. (1993). *Bayley Scales of Infant Development* (2nd ed.). New York: Psychological Corp.
Research-based guidelines related to a child's growth and development. Useful for assessment and understanding of key growth indicators.
- Hammet, C.T. (1992). *Movement Activities for Early Childhood*. Champaign, Ill.: Human Kinetics.
Useful resource highlighting different types of movement activities that can assist young children with physical development.
- Kristensen, N. (2001). *Basic Parenting Focus Issue: Motor Development*. Minneapolis, Minn.: Family Information Services.
Very useful set of materials and handouts summarizing key points related to a young child's physical growth and development.

- Mayesky, M. (1999). *Creative Activities for Children*. Thomson Publishing.
Useful resource highlighting activities that can be done with young children to stimulate growth and development.
- Malina, R.M., and C. Bouchard. (1991). *Growth, Maturation, and Physical Activity*. Champaign, Ill.: Human Kinetics.
Excellent text on the scientific understanding of physical growth and development in human beings.
- Your Baby is Growing Strong; Your Baby is Learning to Play; Your Baby is Becoming a Person; Your Child is Growing Strong; Your Child is Learning to Play; Your Child is Becoming a Person* (charts). (1997). Minneapolis, Minn.: MELD.
Useful set of charts on a baby's growth and development.

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- Berk, L.E. (1989). *Child Development*. Boston, Mass.: Allyn and Bacon.
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