

“It is important to be active for children to build small and large muscles and to use the calories they consume.”

– Darlene Tanck,  
Dolly’s Daycare,  
Merrill

## overview

**Physical development** refers to a child’s rate of growth and control over muscles, coordination, and ability to sit, stand, walk, and run. Motor development is part of physical development, and refers to the growth in the ability of children to use their bodies and physical skills.

Motor development can be divided into gross motor skills and fine motor skills.

- **Gross motor skills** refer to a child’s ability to control larger parts of the body, including balance, coordination, purposeful control, locomotion, and stability
- **Fine motor skills** refer to the level of coordination of and ability to manipulate smaller body parts (such as using thumb and forefinger to pick up a raisin)

A child’s ability to be physically active depends on physical growth and development. There are many aspects of physical and gross motor development, including:

- **Locomotor skills:** rolling, crawling, walking, and running
- **Balance and coordination skills:** standing, squatting, tiptoeing, and jumping
- **Manipulative skills:** carrying, throwing, and catching

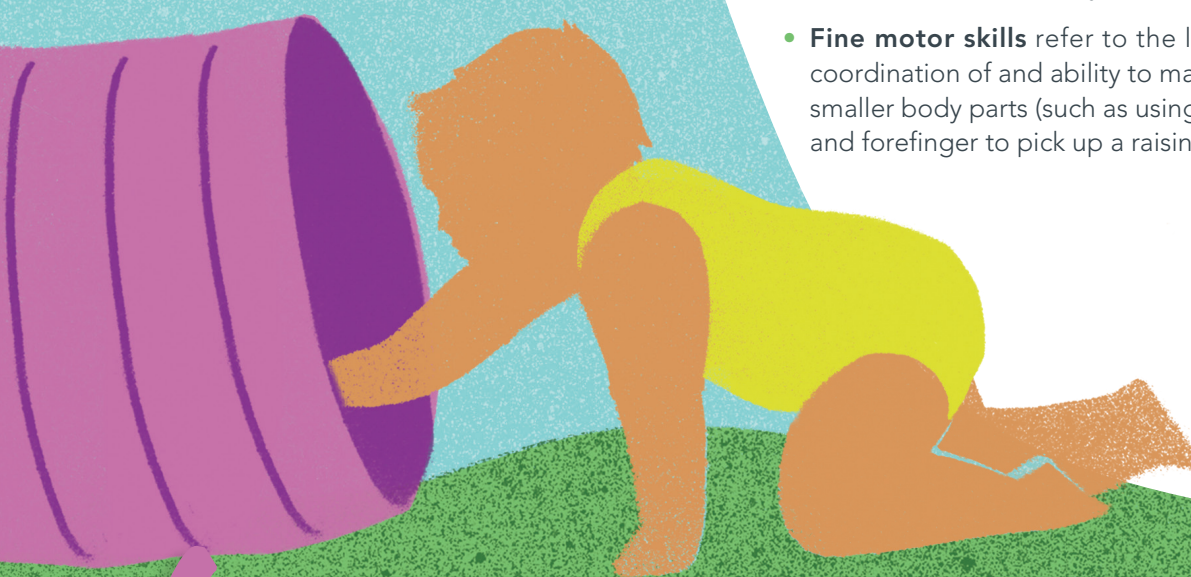
Although all children will not grow and develop at the same rate, it is important to keep in mind the overall patterns of growth in young children. This growth pattern explains a lot about a child’s movement and activity. Keep these key points in mind as you are working with the children in your care:

- **At birth, the head is the fastest growing part of the body.**

As a result, infants and toddlers have a higher center of gravity. This makes it difficult to balance and is the reason young children are likely to fall.

“I have been trying for months to teach a child to skip. She is 4 1/2 and has a hard time crossing the midline with her body, and I have been struggling to find a way to teach her. When given some of the tools, it was the Choosy CD that helped teach these skills. The day she was able to skip, we all got very excited and did a little dance. It was great to see her feel so good about accomplishing the skill.”

– Teresa Storm, Tender Times Child Care, Amery



## Movement and the Brain

Because the motor center affects other parts of the brain, movement assists in and benefits:

- Brain development
- Integration of senses
- Vision
- Hearing
- Coordination
- The ability to plan out a movement before physically taking action

- **The torso lengthens throughout early childhood.**
  - This lowers the center of gravity
  - With this growth, children are able to balance and are less likely to fall
  - Children do not develop a center of gravity similar to adults until about age 6
- **Children grow from their torso out.**
  - Children's arms grow before their hands, which grow before their fingers. Their legs grow before their feet
  - For this reason, children develop gross motor skills before they develop fine motor skills
  - Infants demonstrate this process as they learn to grasp objects. Newborns will use their entire arms to swipe at things. As they grow, they begin to use their entire hands to grab objects. Eventually they will use their fingers to grab objects

**Brain development** refers to the growth of the brain and the creation of new connections in the brain. Movement and activity positively impact brain development. Physical activity helps the body make a chemical that acts like Miracle-Gro for the brain.<sup>1</sup> A number of factors influence early brain development:

- Physical activity
- Genetics
- Oxygen
- Responsiveness of caregivers
- Daily experiences
- Love

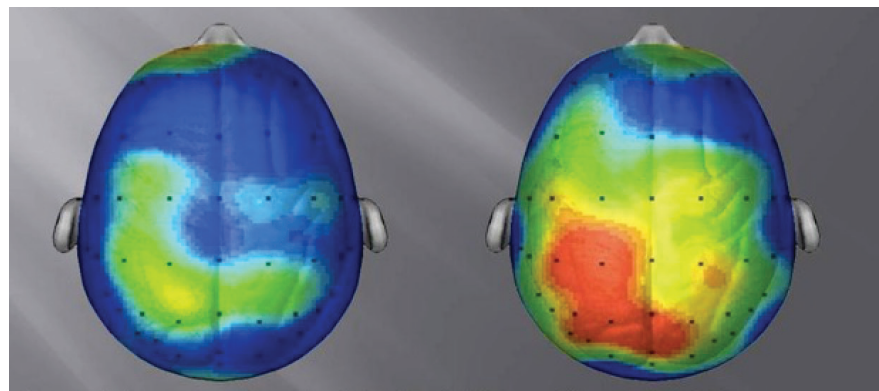
**Language development** refers to the process of learning to speak and communicate. Language development is linked to physical development. Knowing the words that describe the body, types of movement, intensity, direction, and spatial relationships help children learn, practice, and master skills. Movement and rhythm stimulate the brain (frontal lobes) and enrich language and motor development.

### quick tip

When participating in physical activity with the children in your care, talk about movements using vocabulary that will help children understand their activities.

Brain after sitting quietly

Brain after 20 minute walk



Research/scan compliments of Dr. Chuck Hillman, University of Illinois

<sup>1</sup> John Ratey, MD. Harvard Psychiatrist.



## Gross Motor Developmental Milestones: Quick Reference Chart

AGE	Traveling Skills	Balancing Skills	Manipulative Skills
<b>Birth to 1 year</b>	<ul style="list-style-type: none"> <li>• Holds head up steadily</li> <li>• Lifts head/shoulders by propping up on arms</li> <li>• Rolls over from back to stomach</li> <li>• Crawls</li> <li>• Pulls to stand</li> </ul>	<ul style="list-style-type: none"> <li>• Sits alone momentarily</li> <li>• Stands momentarily without support</li> <li>• Can prop sit</li> <li>• Rocks back and forth on hands and knees</li> </ul>	<ul style="list-style-type: none"> <li>• Opens hand to release toy</li> <li>• Reaches with one hand</li> <li>• Bats at rattle that is held near</li> <li>• Reaches for toy with entire hand</li> </ul>
<b>1 to 2 years</b>	<ul style="list-style-type: none"> <li>• Cruises while holding on to furniture</li> <li>• Walks across room, starting and stopping</li> <li>• Walks up and down stairs, with support</li> <li>• Walks independently</li> <li>• Moves body in new ways, such as tumbling</li> <li>• Walks sideways and backwards</li> <li>• Walks to a ball and kicks it</li> <li>• Runs alone</li> <li>• Runs with increasing speed</li> <li>• Jumps in place</li> <li>• Jumps over objects or off a step</li> </ul>	<ul style="list-style-type: none"> <li>• Squats to pick up toys</li> <li>• Stands on tiptoes to reach something</li> <li>• Gets in and out of adult chair</li> <li>• Kneels while playing</li> <li>• Straddles across beam or sandbox edge</li> <li>• Tries to stand on a flat board</li> </ul>	<ul style="list-style-type: none"> <li>• Carries a large ball while moving</li> <li>• Flings a beanbag</li> <li>• Throws a ball or other object by pushing it with both hands</li> <li>• Catches a large, bounced ball against body with straight arms</li> <li>• Kicks a stationary ball</li> <li>• Holds object in one hand and bangs an object with the other</li> <li>• Dumps pail with one hand and retrieves shovel that falls out with other</li> <li>• Throws ball intentionally</li> <li>• Throws ball overhand, using both arms, while standing</li> </ul>
<b>2 to 3 years</b>	<ul style="list-style-type: none"> <li>• Walks across room</li> <li>• Uses a hurried walk</li> <li>• Walks backwards</li> <li>• Pushes a riding toy with feet while steering</li> <li>• Uses a walker to get to the table</li> <li>• Marches around room</li> <li>• Walks up and down stairs alternating feet, holding handrail or with help</li> <li>• Jumps in place, two feet together</li> </ul>	<ul style="list-style-type: none"> <li>• Squats to pick up toys</li> <li>• Stands on tiptoes to reach something</li> <li>• Gets in and out of adult chair</li> <li>• Kneels while playing</li> <li>• Straddles a taped line on the floor</li> <li>• Sidesteps a taped line on the floor</li> <li>• Sidesteps across beam or sandbox edge</li> </ul>	<ul style="list-style-type: none"> <li>• Carries a large ball while moving</li> <li>• Flings a beanbag</li> <li>• Throws a ball or other object by pushing it with both hands</li> <li>• Catches a large, bounced ball against the body with arms straight</li> <li>• Kicks a stationary ball</li> </ul>

## Gross Motor Developmental Milestones: Quick Reference Chart, cont'd.

AGE	Traveling Skills	Balancing Skills	Manipulative Skills
<b>3 to 4 years</b>	<ul style="list-style-type: none"> <li>• Runs</li> <li>• Avoids obstacles and people while moving</li> <li>• Walks up and down stairs alternating feet</li> <li>• Climbs at least two rungs of a jungle gym</li> <li>• Climbs up and down on playground equipment</li> <li>• Rides tricycle using feet to push forward</li> <li>• Rides tricycle using pedals</li> <li>• Gallops, but not smoothly</li> <li>• Jumps over objects or off a step</li> </ul>	<ul style="list-style-type: none"> <li>• Walks forward along sandbox edge, watching feet</li> <li>• Jumps off low step, landing on two feet</li> <li>• Jumps over small objects</li> </ul>	<ul style="list-style-type: none"> <li>• Throws a ball or other object</li> <li>• Traps thrown ball against body (bending arms when catching)</li> <li>• Strikes a balloon with a large paddle</li> <li>• Kicks ball forward by stepping or running up to it</li> </ul>
<b>4 to 12 years</b>	<ul style="list-style-type: none"> <li>• Runs smoothly, quickly changes directions and stops/starts quickly</li> <li>• Jumps and spins</li> <li>• Marches</li> <li>• Moves through obstacle course</li> <li>• Gallops and skips with ease</li> <li>• Plays "Follow the Leader" using a variety of traveling movements</li> <li>• Plays games that require jumping or kicking a ball</li> </ul>	<ul style="list-style-type: none"> <li>• Hops across the playground; hops on one foot then the other</li> <li>• Walks across beam or sandbox edge, forward and backward</li> <li>• Attempts to jump rope</li> <li>• Hops, skips, or twirls around and stops without falling</li> </ul>	<ul style="list-style-type: none"> <li>• Steps forward to throw ball and follows through</li> <li>• Catches a thrown ball with both hands</li> <li>• Throws a hand-sized ball</li> <li>• Dribbles a ball</li> <li>• Strikes a stationary ball</li> <li>• Bounces and catches a ball</li> <li>• Kicks moving ball while running</li> <li>• Pounds with, shakes, twists or swings an arm or leg</li> </ul>

From *Active Start: A Statement of Physical Activity Guidelines for Children From Birth to Age 5*, 2nd Ed. (2009), [www.AAHPERD.org](http://www.AAHPERD.org), National Association of Sport and Physical Education

## infants

Infants are absorbing all of the information around them as they learn to control their movements. They not only communicate through cries, but also their body language. Child care providers can actively support the physical, cognitive, and language development of the infants in their care.

### Physical Development

“Tummy time” encourages physical development in infants by giving them time to practice raising their heads and upper bodies, which will eventually develop into crawling. This also gives infants the opportunity to learn to roll over. Even young infants should experience tummy time. Additionally, you can begin to gently move the arms and legs of younger infants back and forth and side to side. As infants grow, you can use favorite objects to encourage infants to wiggle and move.

“For the infant, I watch him closely and change the environment so he has safe opportunities to climb, pull himself up, and also to support his body so he can bounce and dance with the other children.”

– Brenda Flannery,  
Lil Blessings Child Care, Crandon

### Language Development

Long before young children begin to form speech, infants soak in the sights and sounds around them that are essential to language development. As you touch and move infants and encourage physical activity, talk to them continuously. Say the names of different parts of the body as you move them and describe the motions they are making.

### Brain Development

Touch is an important stimulant for brain development. Take time to find out what the infants in your care enjoy. For example, one infant might like the arms and hands to be gently stroked, while another may respond better to a firmer touch. Some opportunities for stimulating brain development include crossing infants’ arms and legs over the midlines of their bodies. This will lead to improved physical coordination.

## quick tip

Keep it simple! It is important for toddlers to master what they can do before moving on to the next stage of development.

## activity idea

### Pillow Obstacle Course

Place pillows and couch cushions on the floor for baby to creep, crawl, roll and climb over and around.

– Dr. Craft’s Active Play! page 99

“Give babies safe objects to pick up, put in their mouths, handle and throw down. These activities help them develop hand-eye coordination.”

– From Dr. Craft’s Active Play! page 98

## toddlers

It is important for caregivers working with toddlers to realize that every child has an individual rate of growth and development. This will help providers encourage the progressive skill development for this age group.

### Physical Development

As toddlers' bodies grow taller and their arms and legs become stronger, balance and coordination improve. As you promote physical activity in your program, remember that physical growth and development happen in a sequence. For example, a toddler learns to stand before walking, and walks before running. Think about the sequence of skill development as you design activities for the toddlers in your care.

### Brain Development

The brain itself and the connections in the brain grow rapidly in toddlers. These connections help toddlers build not only the skills needed to be active but also cognitive and social skills. Toddlers need a variety of experiences to continue to stimulate brain development. Movement and physical activity stimulate the brain and promote learning, so it is important that toddlers have space and encouragement to keep moving throughout the day. Nutrition and sleep are also vital for brain development.

### Language Development

As toddlers learn new words, they need context to accompany those words and you may find that you need context to understand the words they are using. When teaching toddlers new vocabulary relating to physical activity, build from simple vocabulary such as up, down, in, out, fast, slow, jump and hop. Model what new words mean so toddlers have the context needed to add the words to their own speech. Don't worry if toddlers use words incorrectly—continue to use and repeat the words, modeling them each time.



## activity idea

### Clean Up the Floor

Indoor throwing practice has never been more fun! Dump a basket full of rolled-up pairs of socks and watch all of the children have a wonderful time cleaning up the floor.

Learn more about this activity on page 40 of *Dr. Craft's Active Play!*

“I have found that with increasing the amount of physical activity in my 2-year-old classroom that the children have a better appetite, take a good nap and even some behavior issues have lessened”

– Debbie Wright,  
COA Child Care Center,  
Milwaukee

## preschoolers and older children

Many people believe young children are naturally active enough. Children may seem to be always on the move; however, research shows that much of their physical activity is light, including sitting, squatting, laying down, standing, and walking. On average, today's children are not as active as in previous generations, nor are they as active as they need to be to stay healthy.

### Physical Development

During the early years, children develop more complex gross motor skills that usually involve several stages. For example, skipping requires coordinating steps and hops, and riding a tricycle involves steering and pedaling. Give your children time to practice their gross motor skills every day.

While gross motor skills are developing quickly so are fine motor skills. These skills help children make smaller movements and include holding and using small objects, such as crayons and pencils, with fingers rather than fists. Although we often think about fine motor skills in terms of writing or drawing, we also use these skills in physical activity. We need fine motor skills to be able to hold and manipulate smaller objects, for example a baseball. As gross and fine motor skills continue to develop, children improve their motor control and hand-eye coordination, both of which foster physical activity.

### Brain Development

Throughout the early childhood years, the brain continues to grow and develop and experiences spurts of developing connections.

These connections in the brain are critical for healthy development, enabling children to sharpen, control, and coordinate both their gross motor and fine motor skills. Experience stimulates all of this brain activity and children need opportunities to learn, practice, and master physical activities.

### Language Development

Children learn new words at an amazing rate. They will use words they are familiar with to expand, increase, and explore their vocabulary. Children can learn terms such as swaying, exercise, and heart rate when you introduce them alongside words they already know. The more they can see you model the meaning of words, the more they are able to use these words themselves. Additionally, children learn grammar at the same time as vocabulary, so they are better able to understand and follow instructions that include more than one step.

*“To be able to jump over the limbo bar when it is at its highest, they are so proud they can do it.”*

– April Orth,  
April's Child Care,  
Salem

## activity idea

### Animal Movements

Choose the favorite animals of the children in your care, making cards to act as cues for movement. Get your CD player ready for children to move like their favorite animals when the music is playing. To begin this activity, choose a card and then start the music. When the music stops, the children freeze and wait to see which animal card will be chosen for them to imitate next. Be sure to take this opportunity to teach movement vocabulary, using phrases such as “walk like a crab” and “hop like a bunny.”



## multi-age groups

Working with children of multiple ages means working with children in completely different stages of development. It is important to know where each child is in terms of physical, brain, and language development so you can adapt activities, routines, and environments to address the developmental stages of all children.

Multi-age groups can occur in centers with multiple staff members to help or in home environments with only one provider. With a variety of developmental levels, activities have to be flexible. Here are some ideas to engage multiple developmental levels in one activity:

- 1. Scaffolding.** This is a great tool when you have two children close in age and ability, with one slightly ahead of the other. Give the children a physical activity that involves the older child helping the younger child, such as dribbling a ball, throwing a ball through a hoop, or swinging. This will help both children develop their skills.
- 2. Support child-initiated activity.** Large dice with different gross motor skills on each side or picture flashcards depicting gross motor skills are great tools for promoting self-directed play. Older children can take turns rolling the dice or picking cards and acting out their own physical activities.
- 3. Make the best of technology (but only when you really need it!).** When the day is hectic and you need a quick distraction for the children, it is helpful to have music and movement CDs and active DVDs on hand.

### activity idea

#### Scarves of Many Colors

Have each child pick out a different colored scarf and act out things found in nature, such as trees, water, the sky, or animals.

Give scarves to infants as well so they can learn from sensory exploration. Infants also will see the older children and process what they are doing.



## inclusion

Physical activity may be different for children with a developmental disability. If you are working with a child who has an identified developmental disability, think about how physical activity opportunities can be adapted to meet the child's individual needs. Here are a few examples:

- A child with a speech or language delay or hearing loss may need more frequent visual and verbal cues, such as counting to three by voice and on your fingers, and jumping three times.
- A child with a cognitive delay may need instructions broken into small, simple steps. The child may benefit from partnering with a friend who can help demonstrate the steps.
- A child with autism may be more or less sensitive to noise, touch, or light. You may need to adapt equipment, materials, and the environment. Additionally, routines are very important with activities occurring at the same times throughout the day.

- A child with physical challenges can thrive in environments that provide ample space to navigate. Include adaptive equipment and store materials accessibly. You can modify activities to use different body parts or motions.

Be careful not to generalize. Not every child with a certain type of disability or delay will respond to the same adaptations. Get to know the children in your care and customize adjustments to each child.

If you are aware that a child is developing at a different rate or in a different way, be sensitive to the needs of that child and the child's parents. Be sure you understand the child's individualized education plan (IEP) or individualized family service plan (IFSP) and how it relates to physical activity. Physical activity should be flexible and adaptable to all children in your care. Resources are available to help you adapt activities and materials so all children can participate in physical activity.



## cultural competency

One of the most important concepts in cultural competency is to honor the individual. The best way to ensure you are honoring each child's culture is to get to know every family in your care through constant communication about each child's progress and needs and to understand the values of each family.

Ways to learn a family's culture and how physical activity is viewed include:

- Ask questions about physical activity in interviews and conferences
- Have an "All About Me" section in your curriculum. Include pieces that ask how children and families are active. Include photos of physical activity to promote physical activity in your classroom and at home
- Do a physical activity show-and-tell. Children can share a game or activity they do with their families at home. You may learn new games and activities too

## tools included

### Language Development Chart

Use this chart to refresh your movement vocabulary so you can teach your children how to communicate about movement and physical activity (Appendix F)

"At our parent events, we always incorporate a movement activity. The best so far was dads doing a rhythm stick dance."

– Verna Drake,  
Westby Day Care and Learning Center,  
Westby

## engaging families

Plan family nights that focus on physical development and activity. This will also give you an opportunity to learn how active lifestyles fit into the cultures of the families in your program.

## engaging communities

Collaborate with your local children's museum to promote physical activity. Consider exhibits designed to educate families about physical development and promote physical activity.

"We had a father who is a teacher in the public school come in and do a "Family Activity Night." We had several stations set up for active participation, including a stretching station, obstacle course, family tug-o-war, hula hoops and fill-in-the-bucket activities. We had a great number of families participate."

– Wendy Eagon,  
University Children's Center,  
Menasha