

Be Active Kids: A Physical Activity Program for North Carolina Child Care Programs

Allison De Marco, MSW PhD

Susan Zeisel, EdD

Frank Porter Graham Child Development Institute
The University of North Carolina at Chapel Hill

Task Force on Early Childhood Obesity Prevention
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Frank Porter Graham Child Development Institute

- One of the nation's largest multidisciplinary centers for studying young children and their families
- Produced groundbreaking work that has shaped how the nation cares for and educates young children (e.g., Abecedarian)
- 45 Ph.D. level Investigators, Scientists, and Senior Scientists; over 200 staff persons; and 50 undergraduate and graduate students



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Impetus for Program

- **FPG approached by BCBS Foundation to update Be Active Kids**
 - Separate physical activity from nutrition section
 - Reach back to include all children in child care birth to 5



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Importance of Physical Activity

- In North Carolina, 14.7% of children ages 2-5 are obese
- Essential for caregivers to become more involved in young children's physical activity and nutrition
- Aim to influence behaviors and habits when children are young



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Importance of Physical Activity cont.

- **Important links between physical activity, fitness and play and other areas of development such as cognition, behavior, and stress.**
 - Increased physical activity yields higher test scores and reduces disciplinary problems at school.
 - Schools with a higher percentage of fit students earned better state performance ratings.
 - Students who were physically fit posted higher attendance rates.



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Physical Activity in Child Care

- **We assume that if children are given the opportunity to be physically active, such as unstructured free play and recess, they will do so and at a high level of intensity. This is not always the case (Brown, et. al, 2009):**
 - Preschoolers don't move around a lot, even when playing outside.
 - Preschoolers inactive for much of preschool day: 89% of physical activity characterized as sedentary.
 - Even when outside, a time when children are expected to move around, 56% of activities were sedentary.
 - Teachers very rarely encouraged the children to be physically active.



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Link Between Motor Development and Physical Activity

- **Motor skills that use larger muscles groups to complete other functions:**
 - Roll Over/Sit/Crawl
 - Walk/Run
 - Gallop/Skip
 - Jump/Hop
 - Climb
- **Motor skills we utilize everyday in work and play situations and skills in which we become increasingly adept**
- **As children achieve success in motor activities, more likely to be physically active**



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Motor Development in Typically Developing Children

Mountain of Skill Development

(Clark, 2005; Clark and Metcalfe, 2002)



Skillful Period
(11 Years - Adult)



**Context-Specific
Motor Skills Period**
(7-11 Years)



**Fundamental
Motor Skills Period**
(1-7 Years)



Preadapted Period
(2 Weeks - 1 Year)

Reflexive Period
(Birth - 2 Weeks)





Project Overview

- **Key informant interviews**
 - Simple instructions
 - Ideas for classroom management
 - Inexpensive, easily replaceable materials
- **Development of draft lessons**
 - Infants
 - Toddlers
 - Twos/Threes
 - Preschoolers



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Project Overview, cont.

- **Consultant review**
 - Activity development
 - Observation/data collection
- **Pilot of full activity draft**
 - FPG Child Care Program
 - Observations & teacher feedback





Project Overview, cont.

- **Revisions & adaptations**
 - Incorporated feedback
 - Adaptations for children with different abilities
- **Formal evaluation**
 - Observations of activities **prior to** and **after training** to measure children's activity levels
 - Activity notebook + materials
 - Select time(s) in day to use each activity after training
 - Teacher/program surveys
 - Review of lesson plans
 - \$100/class incentive



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Research Questions

- What is the amount of moderate-vigorous physical activity children in child care engage in at baseline?
- Do teacher training and the introduction of a physical activity curriculum increase the amount of moderate-vigorous physical activity children in child care engage in?
- Do teacher training and the introduction of a physical activity curriculum increase the amount of teacher-directed physical activity?
- Do teacher training and the introduction of a physical activity curriculum increase teacher-prompts encouraging physical activity?



PlayCheck Observation Tool

Snapshot Segment

PLAYCHECK **Be Active**

Student: 1 of 10
Segment: 1 of 12 Section 1 of 3 Time 00:00 of 1:00:00
Seconds: 10

Show Help Waiting for Start

| Type | Activity Level | Prompts |
|--|---|-------------------------------------|
| <input type="radio"/> Free Play Inside | <input type="radio"/> Moderate/Vigorous | <input type="checkbox"/> Encourage |
| <input type="radio"/> Free Play Outside | <input type="radio"/> Light | <input type="checkbox"/> Discourage |
| <input type="radio"/> Teacher-Directed Inside | <input type="radio"/> Sedentary | |
| <input type="radio"/> Teacher-Directed Outside | <input type="radio"/> Unknown | |

Adapted from the Observational System for Recording Physical Activity in Children-Preschool (OSRAC-P; Brown et al., 2002)





Materials

- Bubble soap/wands
- Small & large balls
- Scarves
- Floor markers (Poly Dots)
- Punch balls
- Foam noodles
- Cones
- Hula hoops
- Bubble wrap
- Paper fruit and tree
- Racquets
- Bean bags
- Hackie Sacks



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Preparation for Teaching

- **Review lesson before implementing activity**
 - Think about any adjustments in activity, extra materials needed, or modifications for children with disabilities
 - Make sure TAs understand the objective of the activity and any adjustments needed
- **Jot down list of equipment needed**



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Preparation for Teaching – cont.

- Think about how to set up the activity – indoors, outdoors, space needed
- Think about grouping to minimize wait times
- Set up the activities before implementing
 - Have TAs assist



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Key Tips for Including Physical Activity in the Child Care Day

- Physical activity is good in and of itself
- Make activity fun - sing songs, play music
- Encourage participation and not just success
- Incorporate teacher physical activity – model activity
- Plan indoor space to encourage physical activity
- Keep kids moving during inactive parts of activity – have waiting children be cheerleaders, have them jump in place.



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Key Tips for Including Physical Activity in the Child Care Day, cont.

- Give children plenty of time outside in both free and structured play
- Make 40 minutes 2 20-minute periods – more realistic time spans for children
- Portable over fixed equipment so children explore and use their imaginations
- Talk about physical activity and health (our hearts are a muscle, sweating is good to regulate body heat)



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Key Tips for Including Physical Activity in the Child Care Day, cont.

- 0-3 year olds use auditory, kinesthetic, and sight, and like sparkly things
- 4-5 year olds play games with rules - let them create their own rules
- Maximum Individual Participation: Adapt for all ability levels
- Include activities that teach skills, build strength, stamina, and flexibility.

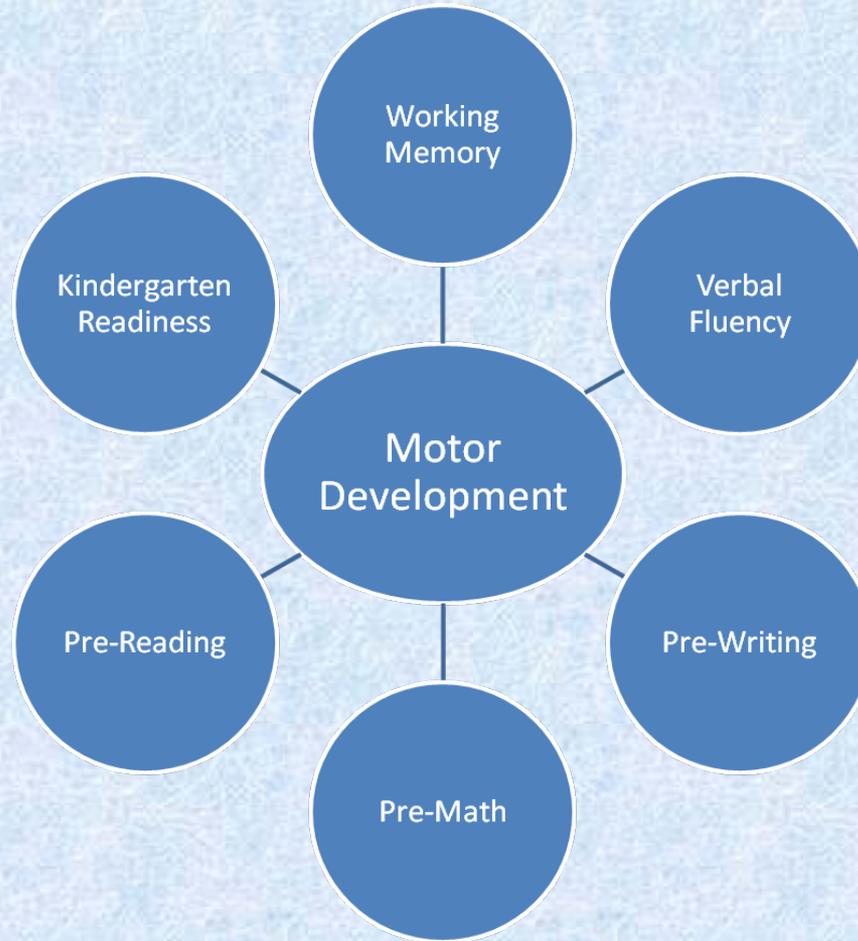


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How is Motor Performance Linked to Other Developmental Areas?



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Including Academic Content in Physical Activities: Curricular Concepts

- **Early Numeracy**

- In the preschool activity *Jump Like a Rabbit*, have the children count how many times they can jump vertically and touch the star, etc on the wall

- **Early Language & Literacy**

- In *Side Stepping* for Twos place letters on the dots to step to.

- **Colors**

- In the preschool *Freeze Game* mark the corners with colors and have the children move to the different colors



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Challenges for Young Children with Disabilities

- **Challenges that Interfere with Motor Play**
 - Balance
 - Postural control
 - Locomotion
 - Eye hand coordination
 - Object manipulation skills



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Other Challenges for Young Children with Disabilities that Interfere with Motor Play

- **Social Skills**

- Getting along with others
- Turn taking and sharing
- On-going interaction and communication with peers
- Social exchanges (greetings, pat on back)

- **Poor Motivation**

- Willingness to try new activities
- Sustained participation in activities
- Completion of activities



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Adaptation of Activities

- Consider positioning of the child
- Break directions into smaller units
- Use visual markers
- Use physical prompts
- Use materials with light and sound
- Change size/weight of objects (softer materials, de-inflated balls)
- Use of aides: If child cannot grasp, put on mitten with Velcro that can grasp object
- Hand-over-hand to guide activities such as ball throwing
- Partners to help
- Vary the number of repetitions to allow for success
- Assign other tasks such as being a drummer or caller



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Physical Activities for Young Children

- **Modeling Activities**
 - Infant activities
 - Cross-age activities
 - Toddler activities
 - Twos activities
 - Preschool activities



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Infant Activities: Flying Like A Bird

Be Active Birth to Five Physical Activity Program

Legend

Name: Flying like a Bird

Age group: 4 months to 1 year

Equipment: none

Arrangement: none

Curricular Concepts: Language & literacy

Physical Activity: Flying Like a Bird (arm flapping) - Gross motor

Instructions: Sit with the baby in your lap, facing out. Talk to her about birds flying or show her a book. Then flap your arms in big flying movements and encourage her to do the same.

Tips: Help her by reaching her arms up, too.



Alternatives/Adaptations: As she starts to walk, she can “take-off” from your lap and “fly” around the room. You can also sing songs about birds. Talk about how birds have big, strong wings that they use to fly with.

Infant Activities: Mountain Climbing

Be Active Birth to Five Physical Activity Program

Legend

Name: Mountain Climbing

Age group: 10+ months

Equipment: caregiver

Arrangement: None

Physical Activity: Creeping over barrier (caregiver's legs)

Instructions: With the baby sitting on the floor to one side of you, sit with your legs out and knees together. Place a toy on your other side and encourage the baby to climb over your legs to get it.



Alternatives/Adaptations: Bend your knees to make a higher “mountain.” Use a lower barrier such as a folded blanket

Infant Activities: Sensory Bottles

Be Active Birth to Five Physical Activity Program

Legend

Name: Sensory Bottles

Age group: 4+ months

Equipment: bottles of various sizes, filled with rice, beans, water, etc, sealed

Arrangement: None

Physical Activity: Manipulating Sensory Bottles

Instructions: Collect bottles of various sizes and fill them with interesting items, such as rice, water, beans, or feathers, and securely seal them. Sit with baby and help him to roll and manipulate them.

Tips: As babies develop more skills and mobility you can roll the bottles to him or away from him and encourage him to scoot or crawl after them.



Alternatives: Come up with other fun and interesting items to fill the bottles with to keep babies engaged. Later more mobile babies can lift and carry the bottles and you can increase the weight. Have older babies fill milk crates with the bottles.

Cross-age activities

Be Active Birth to Five Physical Activity Program

Physical Activity: Obstacle course

An obstacle course can be made up of any activities that are done one after another. Set up a series of activities where children can try different things that are appropriate to their level of development and tap into a range of activities.

Examples:

For young toddlers, you may set up a tunnel to crawl through, a pile of large pillows to climb over, ball to roll into a box, ball to throw into a basket.

For older toddlers, you may set up a balance beam (or tape on the floor), then hurdles, throw a ball in a box, crawl through a tunnel or over a pile of large pillows.

For preschoolers, set up a balance beam, throw a ball through a hoop, jump from dot to dot, jump over a hurdle.

Tips: When the first child has completed the first activity, have the second child begin in order to minimize waiting time. Have children running between them. Or have them hop, jump, skip.



Legend

Name: Obstacle Course

Age group: Toddlers, Twos, Preschoolers

Equipment: Tape, floor markers, hurdles, balls, box or basket, tunnel or pillows

Arrangement

Curricular Concepts; Language & literacy, imagination

Alternatives: You can vary the activities on the obstacle course. They may be different if you are outside than inside.

Adaptations: Set up activities that children with limited mobility can do – throw a ball into a basket, roll a ball across a table, ride under a hurdle, etc.

Toddler activities

Be Active Birth to Five Physical Activity Program

Legend

Name: Catch the bubble

Age group: Young Toddlers

Equipment: Bubble Soap

Arrangement:

Curricular Concepts: Numeracy,
language & literacy

Physical Activity: “Catch the Bubble”: Running and eye tracking

Instructions:

Blow bubbles so that they are moving across an area. You can run as you blow them

Have children run with the bubbles and try to “catch the bubbles”.

Tips:



Alternatives: Use a bubble wand that makes large bubbles, have children run and pop the big bubble. You can also use a wand that has multiple holes so more children can run after the bubbles.

- Make your Own: Six-At-Once Bubble Wand
 1. Use tape to attach a plastic six-pack holder to the end of a drinking straw. (You can also cut the six-pack holder into a few smaller pieces to create 4- or 2-ring wands.)
 2. Dip the rings into your bubble solution. Pull them out and wave the wand around to create lots of bubbles!

Adaptations: These activities can be done sitting for a child with mobility difficulties. They can track the bubbles and follow with their arms.

Twos Activities

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Legend
Name: Jumping in the Lily Pond
Age group: Twos
Equipment: Dot or hula hoop
Arrangement:
Curricular Concepts: Language & literacy, science

Physical Activity: Jumping

Instructions: “The frogs are getting busy for Frog Jumping Day.. They see all of the lily pads in the pond. They move around by jumping. We are going to jump like frogs. Can someone show me how a frog jumps? What does a frog say?”

Place dots (lily pads) in a line. Have child bend knees and jump from one dot to another.

Tips: Place dots further apart as children master jumping.
Place dots in zigzag.



Alternatives:

Using hula hoops have child jump in place in the circle, then jump off the “lily pad” into the water.

Adaptations:

Preschooler Activities

Be Active Birth to Five Physical Activity Program

Physical Activity: Hurdle

Instructions:

Start with a foam noodle cut into 3 foot length on the floor. For low hurdles tape the foam noodle to the floor. You can also tape the noodle to a block for height.

Place noodles in a large circle, square or line with space between to form a continuous path. Use different color noodles and have children say the name of the color.

Demonstrate jumping over the "hurdle". Have music playing music as children start jumping.

Tips:

Progress to higher hurdles. Noodles can be raised on foam shape holders or through the legs of chairs. Or use a bar that is placed into holes in cones or block.

Have no more than 4-5 children at one hurdle at a time to decrease wait time. Have children cheer for their classmate as they go over the hurdle.

Cues: Bend your knees and then jump.

| Legend |
|---|
| Name: Hurdles |
| Age group: Twos, Preschoolers |
| Equipment: Foam noodles, Bar at varying heights; music |
| Arrangement: |
| Curricular Concepts: Language & Literacy |



Alternatives/Adaptations:

Younger children or children who cannot jump can start by walking over the hurdles. Children will jump over one leg at a time before they are able to do a two-foot jump.

Use hurdles as part of an obstacle course.

Have children climb over with hands and then feet.

Prop some hurdles high enough so non-ambulatory children can crawl under them.

For children in wheelchairs, put hurdles higher so they can roll under them.

Future Directions

- Modify activities and introductory material based on teacher feedback
- Finalize format – to be produced by BCBS
- Training of child care providers by BCBS as part of SHAPE NC
- Possible future development of at-home piece



Questions

- Allison De Marco: 919-843-9911, ademarco@unc.edu
- Susan Zeisel: 919-966-7195, susan_zeisel@unc.edu
- Katie Collins: 919-966-5293, katie.collins@unc.edu



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