



The Role  
and Value of  
Portable  
Play  
Equipment  
in the Child Care Center



South Carolina Institute of  
Medicine & Public Health

*Prepared by the South Carolina Department of Health and Environmental Control  
and the South Carolina Institute of Medicine and Public Health*

## Background

Child care centers have become an integral part of our communities due to the amount of time children spend in these facilities. In 2011, 59 percent of 3 to 5-year-olds in the U.S. participated in full-day kindergarten, nursery, or preschool programs. This percentage increased significantly from 32 percent in 1980.<sup>1</sup>

Fundamental gross motor skills are learned in the early years of life, and the child care setting can facilitate opportunities for young children to practice these skills and increase their physical activity. Outdoor play on the child care playground lends itself to promoting physical activity and the development of these skills with the use of play equipment.

Play equipment can be divided into two categories: stationary/fixed or portable. Stationary or fixed play equipment consists of structures that are anchored within the environment. Examples include climbing structures, slides, and balancing surfaces.<sup>2</sup> Portable play equipment is characterized by its ability to be moved and used in a variety of locations. Fig. 1 on the back cover includes examples of outdoor portable play materials, such as hula hoops, balls, and riding toys.<sup>3</sup> While both types of equipment can support children's gross motor skill development, portable play equipment is associated with increased levels of physical activity, reduced cost, and reduced incidents of injury.

## Portable Play Equipment

### *Increased Opportunities for Physical Activity*

**A number of studies have demonstrated that portable play equipment is associated with higher levels of physical activity than fixed play equipment.**

The use of fixed equipment in child care has been correlated with lower intensity physical activity.<sup>2</sup> Evidence suggests preschoolers spend fewer minutes per hour in sedentary behavior and more minutes per hour in moderate to vigorous physical activity in centers with more portable playground equipment than fixed.<sup>4</sup> Notably, the existence of portable play equipment in place of fixed play equipment was a significant predictor of physical activity and motor skill development.<sup>5</sup> After portable play equipment was added to a center's playground, researchers observed decreased sedentary behavior and increased light, moderate, and vigorous activity levels.<sup>6</sup> Given this evidence, the Institute of Medicine recently recommended providing outdoor environments with a

variety of portable play equipment to provide preschool age children with increased opportunities for physical activity.<sup>7</sup>

Moderate to vigorous physical activity is 3.21 times more common when children are engaged with bouncy balls and other portable play objects than with socio-dramatic play props.<sup>8</sup> Socio-dramatic play is the combination of social and dramatic play skills, which include imitative role play, make believe with objects, actions, and situations, verbal communication, and interaction amongst children.<sup>9</sup> Fixed playground equipment can also lead to more sedentary behavior, as compared to portable play equipment, because children may congregate on and under the equipment rather than staying active.<sup>4</sup> One study also demonstrated how larger play areas and teacher-arranged activities further enhance the ability of portable play equipment to increase levels of physical activity.<sup>10</sup>

### *Reduced Costs*

**Portable play equipment is significantly less expensive than fixed play equipment. Since obtaining and maintaining large fixed play equipment is costly, child care centers can benefit from the increased use of portable play equipment.**

Portable play equipment must be replaced more often than fixed equipment. For example, the optimal lifespan of a playground ball is one year. However, even with regular replacement, portable play equipment is a low-cost alternative or supplement to fixed playground equipment. Costs associated with fixed and portable play equipment differ greatly. Cost estimates for fixed play equipment range from \$4,000 to \$50,000 for modular systems.<sup>11</sup> This is in significant contrast to a 59-piece kit of portable play equipment that costs about \$200 and includes playground balls, beanbags, spot markers, flying discs, cones and hula hoops.<sup>12</sup> Installation for fixed play equipment may cost an additional 25 to 35 percent of the price of the equipment, and costs for shipping the equipment and adding the appropriate safety surfaces are also significant.<sup>13</sup>

In South Carolina, fixed play equipment can result in additional costs for child care facilities in order to comply with the state's Child Care Licensing Regulations. There are 1,577 child care centers and 1,495 group and family child care homes in South Carolina.<sup>14</sup> According to the South Carolina Department of Social Services (S.C. DSS) Licensing Division, in 2012, there were 7,067 reported deficiencies among child care facilities.<sup>14</sup> The most common type of deficiencies

found are those related to playgrounds.<sup>14</sup> Playground equipment regulations generally focus on fixed play equipment and the surrounding environment. The S.C. DSS regulations require that all stationary/fixed play equipment follow specific standards.<sup>15</sup>

### Some of these standards include:

- Outdoor recreational equipment shall be made of durable, non-rusting, non-poisonous materials and shall be sturdy.
- Stationary/fixed outdoor equipment shall be firmly anchored and shall not be placed on a concrete or asphalt surface. Cushioning material such as mats, wood chips or sand shall be used under climbers, slides, swings, and large pieces of equipment.
- Cushioning material shall extend at least six feet beyond the equipment and swings.

### Reduced Injuries

**Playground injuries are more often associated with the use of fixed play equipment.** According to the U.S. Consumer Product and Safety Commission, more than 200,000 children experience injuries with playground equipment each year in the United States.<sup>16</sup> Nearly 70 percent of injuries occur when children fall to the ground, which is more of a concern for fixed equipment than for portable equipment.<sup>17</sup> The National Program for Playground Safety identified the four following pieces of equipment as being involved in a majority of the injuries: climbers (23%), swings (22%), slides (17%), and overhead ladders (9%).<sup>18</sup>

Injury concerns were identified as a main barrier to children's physical activity in child care.<sup>19</sup> The study found that although injury prevention efforts have led to safety modifications of playground equipment, children may still use the equipment in unsafe ways, such as walking up slides, in order to make the equipment more challenging and interesting.<sup>19</sup> Although many child care centers may focus primarily on making the play environment safe, up to 40 percent of injuries may result from inadequate adult supervision.<sup>20</sup>

### Recommendations for Early Care and Education Decision-Makers:

- Educate child care providers on the use of portable play equipment as a means to increase children's levels of physical activity.
- Promote portable play equipment as an alternative or supplement for child care providers needing to address center deficiencies, cost, and safety concerns.

## References

1. National Center for Education Statistics. (2012). *Early Education and Child Care Arrangements of Young Children*. Available from [http://nces.ed.gov/programs/coe/indicator\\_epr.asp#info.asp](http://nces.ed.gov/programs/coe/indicator_epr.asp#info.asp). Retrieved September 3, 2013.
2. Bower, J. K., Hales, D. P., Tate, D. F., Rubin, D. A., Benjamin, S. E., & Ward, D. S. (2008). The childcare environment and children's physical activity. *American Journal of Preventive Medicine*, 34(1), 23-29.
3. Brown, W. H. & Brewer, A. E. (2011) Physical Activity Guide: Guidelines for promoting preschool children's physical activity on playgrounds. Available from [http://www.abcqualitycare.org/pages/gh\\_docs\\_level\\_b](http://www.abcqualitycare.org/pages/gh_docs_level_b). Retrieved September 3, 2013.
4. Dowda, M., Brown, W. H., McIver, K. L., Pfeiffer, K. A., O'Neill, J. R., Addy, C. L., & Pate, R.R. (2009). Policies and characteristics of the preschool environment and physical activity of young children. *Pediatrics*, 123(2), 261-266.
5. Temple, V. & Naylor P. (2010). Exploring family child care as a context for physical activity. *PHENex Journal*, 2(2).
6. Hannon, J. C. & Brown, B. B. (2008). Increasing preschoolers' physical activity intensities: An activity friendly preschool playground intervention. *Preventive Medicine*, 46, 532-536.
7. Institute of Medicine. *Early Childhood Obesity Prevention Policies*. Washington, DC: The National Academies Press; 2011.
8. Brown, W. H., Pfeiffer, K. A., McIver, K. L., Dowda, M., Addy, C. L., & Pate, R. R. (2009). Social and environmental factors associated with preschoolers' nonsedentary physical activity. *Child Development*, 80(1), 45-58.
9. Heidemann, S. & Hewitt, D. (1992). *The Basics of Play*. Available from [https://reg.abcsignup.com/files/%7B07D0901F-86B6-4CD0-B7A2-908BF5F49EB0%7D\\_59/playchpaters.pdf](https://reg.abcsignup.com/files/%7B07D0901F-86B6-4CD0-B7A2-908BF5F49EB0%7D_59/playchpaters.pdf). Retrieved March 22, 2013.
10. Nicaise, V., Kahan, D., & Sallis, J. (2011). Correlates of moderate-to-vigorous physical activity among preschoolers during unstructured outdoor play periods. *Preventive Medicine*, 53(4-5), 309-315.
11. Terra Bound Solutions. (2013). *Commercial Modular Play Systems*. Available from <http://www.terraboundsolutions.com/Commercial-Modular-Play-Systems.html>. Retrieved September 3, 2013.
12. Discount School Supply. (2013). *Get Out & Get Moving Kit*. Available from <http://www.discountschoolsupply.com/Product/ProductList.aspx?category=990&page=2&pagesize=12&Sort=0&&CategorySearch=1>. Retrieved September 3, 2013.
13. Affordable Playgrounds. (2013). *Frequently Asked Questions*. Available from <http://www.aplay.us/faq.php>. Retrieved April 24, 2012.
14. South Carolina Department of Social Services Child Care Licensing. (2013). Data on number and type of providers and deficiencies. Received April 22, 2013.
15. South Carolina Department of Social Services. (n.d.). *Child Care Licensing & Regulatory Services Operating Manual, Chapter 8*. Available from <http://www.state.sc.us/dss/cdclrs/manual/08.pdf>. Retrieved April 26, 2013.
16. U.S. Consumer Product and Safety Commission. (n.d.). *Public Playground Safety Checklist*. Available from <http://www.cpsc.gov/cpscpub/pubs/327.html>. Retrieved May 7, 2012.
17. National Program for Playground Safety. (2013). *Fall Surfacing*. Available from <http://playgroundsafety.org/safe/fall-surfacing>. Retrieved September 3, 2013.
18. National Program for Playground Safety. (2013). *Injuries*. Available from <http://playgroundsafety.org/research/injuries>. Retrieved September 3, 2013.
19. Copeland, K. A., Sherman, S. N., Kendeigh, C. A., Kalkwarf, H. J., & Saelens, B. E. (2012). Societal values and policies may curtail preschool children's physical activity in child care centers. *Pediatrics*, 129 (2), 265-274.
20. Olsen, H. M., Hudson, S. D., & Thompson, D. (n.d.). *Preventing Injuries on the Playground*. National PTA. Available from <http://www.pta.org/programs/content.cfm?ItemNumber=988>. Retrieved May 7, 2012.

**Fig. 1 - Outdoor Play Portable Play Materials**

Recommended Portable Equipment	Description
<b>Playground Balls</b>	Variety is helpful to provide for different player preferences and mastery (e.g. balls for use on a variety of surfaces and those that can be used both inside and outdoors). It is also beneficial to include balls specific to several different sports in order to reach children with varied interests and experiences. Provide many balls to increase playtime per child (e.g., avoid ball hogging).
<b>Obstacle Cones</b>	Use to promote various routes to travel/run. Cones can also be used to demarcate activity stations.
<b>Parachutes</b>	Facilitate high-energy group play with large and/or small parachutes. Incorporate learning with number, directional and color cues. Add lightweight balls or beanbags to bounce high, low and fast.
<b>Hula Hoops</b>	Hula-hoops can be very versatile. While 4-year-olds may not be ready to jump rope, many can hula. Hoops are also great markers and props for obstacle courses and playground stations.
<b>Scarves</b>	Scarves and like equipment make great relay and cheering props. If students are waiting to participate, or otherwise not participating at the time, encourage them to participate on sidelines by jumping and waving scarves to cheer on fellow participants.
<b>Riding and Push Toys</b> (e.g., scooters, tricycles, trucks, etc.)	Promote coordination and moderate to vigorous physical activity (push truck running, cycling) with child sized riding and push toys.
<b>Music Player</b>	When children (and adults) hear fun and upbeat music, they dance. Keep your playground lively with a dance/music station.



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