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THE POWER OF PLAY

A recent American Academy of Pediatrics clinical report, "The Power of Play," makes the case that play improves executive functioning, helps children buffer the negative effects of toxic stress, and builds 21st century skills.



While the definition of play is elusive, there is a growing consensus that it is an activity that is intrinsically motivated, entails active engagement, and results in joyful discovery. Play is voluntary and often has no extrinsic goals; it is fun and often spontaneous. Children are often seen actively engaged in and passionately engrossed in play; this builds executive functioning skills and contributes to school readiness (bored children will not learn well). Play often creates an imaginative private reality, contains elements of make believe, and is non-literal.

Children's playtime threatened by societal changes

- From 1981 to 1997, children's playtime decreased by 25 percent, and 30 percent of kindergarten children no longer have recess, which has been replaced by academic lessons, according to research published in Advances in Life Course Research. A focus on achievement, out-of-school enrichment programs, homework, and test performance have crowded out children's free playtime.
- A national survey of 8,950 preschool children and parents found that only 51 percent of children went outside to walk or play once a day with a parent.
- Surveys have found as many as 94 percent of parents have safety concerns about outdoor play.
- Despite research that links television watching with a sedentary lifestyle and greater risks of obesity, the typical preschooler watches 4.5 hours of television per day, according to media research.
- Proliferation of media (eg, television, video games, and smartphone and tablet applications) use often encourages passivity and the consumption of others' creativity rather than active learning and socially interactive play. Most importantly, immersion in electronic media takes away time from real play, either outdoors or indoors. Real learning happens better in person-to-person exchanges rather than machine-to-person interactions.

THE BENEFITS OF PLAY



Executive Functioning

Play is not frivolous; it is brain building. Play has been shown to have both direct and indirect effects on brain structure and functioning. Play leads to changes at the molecular (epigenetic), cellular (neuronal connectivity), and behavioral levels (socio-emotional and executive functioning skills) that promote learning and adaptive and/or pro-social behavior.

Executive functioning, which is described as the process of how we learn over the content of what we learn, is a core benefit of play and can be characterized by 3 dimensions: cognitive flexibility, inhibitory control, and working memory. Collectively, these dimensions allow for sustained attention, the filtering of distracting details, improved self-regulation and self-control, better problem solving, and mental flexibility. Executive functioning helps children switch gears and transition from drawing with crayons to getting dressed for school. The development of the pre-frontal cortex and executive functioning balances and moderates the impulsiveness, emotionality, and aggression of the amygdala. In the presence of childhood adversity, the role of play becomes even more important in that the mutual joy and shared attunement that parents and children can experience during play down-regulates the body's stress response.



21st Century Skills and Playful Learning

Play is fundamentally important for learning 21st century skills, such as problem solving, collaboration, and creativity, which require the executive functioning skills that are critical for adult success. The United Nations Convention on the Rights of the Child has enshrined the right to engage in play that is appropriate to the age of the child. In its 2012 exhibit "The Century of the Child: 1900–2000," the Museum of Modern Art noted, "Play is to the 21st century what work was to industrialization. It demonstrates a way of knowing, doing, and creating value." Learning researcher Mitchel Resnick has described 4 guiding principles to support creative learning in children: projects, passion, peers, and play. Play is not just about having fun but about taking risks, experimenting, and testing boundaries. Pediatricians can be influential advocates by encouraging parents and child care providers to play with children and to allow children to have unstructured time to play as well as by encouraging educators to recognize playful learning as an important complement to didactic learning. Some studies note that the new information economy, as opposed to the older industrial one demands more innovation and less imitation, more creativity and less conformity. Research on children's learning indicates that learning thrives when children are given some agency (control of their own actions) to play a role in their own learning. The demands of today's world require that the teaching methods of the past two centuries, such as memorization, be replaced by innovation, application, and transfer.

Mitigating Adversity

Play and stress are closely linked. High amounts of play are associated with low levels of cortisol, suggesting either that play reduces stress or that unstressed animals play more. Play also activates norepinephrine, which facilitates learning at synapses and improves brain plasticity. Play, especially when accompanied by nurturing caregiving, may indirectly affect brain functioning by modulating or buffering adversity and by reducing toxic stress to levels that are more compatible with coping and resilience.

In the presence of childhood adversity, the role of play becomes even more important in that the mutual joy and shared attunement that parents and children can experience during play down-regulates the body's stress response. Hence, play may be an effective antidote to the changes in amygdala size, impulsivity, aggression, and uncontrolled emotion that result from significant childhood adversity and toxic stress. Extrapolating various animal studies, one can suggest that play may serve as an effective buffer for toxic stress.

Physical Health



The health benefits of play involving physical activity are many. Exercise not only promotes healthy weight and cardiovascular fitness but also can enhance the efficacy of the immune, endocrine, and cardiovascular systems. Outdoor playtime for children in Head Start programs has been associated with decreased BMI. Physical activity is associated with decreases in concurrent depressive symptoms. Play decreases stress, fatigue, injury, and depression and increases range of motion, agility, coordination, balance, and flexibility. Children pay more attention to class lessons after free play at recess than they do after physical education programs, which are more structured. Perhaps they are more active during free play.

Role of Pediatricians

The AAP recommends pediatricians take an active role in advocating for play and protecting the integrity of childhood. It recommends pediatricians engage parents in discussions that are nonjudgmental about the importance of play to healthy development; advocate for unstructured playtime; emphasize the importance of playful rather than didactic learning in preschool; and write a "prescription for play" at every well-child visit in the first 2 years of life. Although many parents feel that they do not have the time to play with their children, or that play requires added expense, pediatricians can help them understand that playful learning moments are everywhere, and that they can happen with everyday items and projects in the home, and do not require expensive toys or technology.

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