

Supporting the Development of Executive Function

Alicia, a three year old, interrupts the story that Roberta, her family child care provider, is reading to a small group of children as they wait for Roberta's assistant Sasha to finish preparing lunch. Alicia yells out in a squealing voice, "I don't want the story!"



Roberta responds to Alicia with a calm voice saying, "I know you are probably feeling hungry and it is almost lunch time. Why don't we sing a song while we wait? We can finish this story after lunch." Roberta puts the book aside and begins to sing, "Head, Shoulders, Knees and Toes" and soon all of the children in the group are doing the motions and singing along. As the children take turns washing their hands and sitting down for lunch, Roberta comments to Alicia, "I know it can be so hard to wait and I am so glad we were able to find something to do to make it easier. You really worked hard while you were waiting for lunch and now it is time to eat!"

What is Executive Function?

Executive function includes a set of higher level thinking skills that are located in the pre-frontal cortex area of the brain. Executive function works together with self-regulation and includes memory, flexible thinking, and self-control, which are required for tasks that involve focusing attention, delaying gratification, making and carrying out a plan, controlling impulses, and managing multiple tasks successfully.

Why is it important?

Executive function includes skills that are essential for learning and being a member of a social group. The pre-frontal cortex is the last area of the brain to develop, so children are not born with executive function skills, but with the capacity to develop them. Executive function continues to develop into adulthood. Increasing memory, flexible thinking, and self-control over time allows for increased learning and positive social interactions when children are given the appropriate support to develop executive function.

How do children develop executive function?

Children are supported in developing executive function skills in the context of positive, healthy relationships. When children have a sense of what to expect through consistency and routines, and adults that they trust to help them as needed and model positive behaviors, they can practice these types of skills. This means that caregivers are aware of children's varying levels of executive function and self-regulation and scaffold experiences to support children based on where they are in their development.



Strategies that caregivers can use to help children:

- **Redirect** children's attention to something other than the object they desire, such as playing in the sandbox while they wait for a turn with a bike.
- **Verbally scaffold** experiences that children find challenging by acknowledging that something might be difficult and breaking the challenge into smaller more manageable parts, such as indicating that there are two more children signed up to paint at the easel before their turn and they might imagine what they will paint when it is their turn while they wait.
- **Model** positive social interactions and appropriate ways to manage emotional reactions, such as by verbalizing how another person made you feel as well as the strategy you used for self-control ("When they knocked over my tower I was so angry, so I had to walk away and take deep breaths to calm down before I could talk to them about it").
- **Establish consistent routines** to help children know what to expect throughout the day and allow for predictable patterns. For example, reading a book before naptime each day consistently helps children to eventually make a smooth transition.
- **Give opportunities** for children to practice making a plan and carrying it out as appropriate for their age. For example, a preschool aged child might express interest in making a book and you could prompt them to list what they will need for their project and support them in gathering supplies and with some of the steps in the project, such as writing their words.
- **Manage expectations** with the understanding that each child will develop executive function at different rates and may experience setbacks. For example, when children experience changes, whether in their family (such as the birth of a new sibling), or internally (such as a growth spurt), they may struggle with self-control as they adjust to the change.

There are variations in the rate and way in which executive function develops. Expectations for children's executive function and self-regulation need to take into account:

Age: The younger the child, the less capacity they will have for things like waiting and managing impulses and the more support they will need from caregivers to increase their skills. With time and practice, children will have increased memory, flexibility in their thinking, and self-control.

Individual differences: Children may vary in their executive function development due to differences in temperament, with children who are more reactive or sensitive needing more support to develop self regulation and children who are more reserved and shy needing support with being flexible. Variation might also be related to physical, mental, learning or developmental differences.

Stress: When a child or family is experiencing ongoing stress, it is difficult for parents to fully support children in the ways they might need to develop executive



function skills and the energy that the child needs to put toward developing these skills might be centered on managing the stress.

Caregivers who recognize the role that stress can play on development can support

children and families to help reduce the stress in their lives by connecting them with essential resources in the community and providing a loving and safe environment for children to receive supportive care.

Resources:

Shonkoff, J. P., & Phillips, D. A. (2000). From neurons to neighborhoods. *The Science of Early Childhood Development*. National Academy Press: Washington DC.

<http://developingchild.harvard.edu>

<https://www.zerotothree.org/early-development/brain-development>