



THE UNIVERSITY
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Promoting Self-Regulation in the First Five Years: A Practice Brief

Early childhood is a period of rapid brain development that paves the way for growth of self-regulation skills. This brief builds on reviews of the theoretical and intervention literature to provide early childhood leaders such as program administrators with guidelines for promoting self-regulation development in children aged birth through 5 years, both programmatically and through supportive environmental contexts. The brief is based on work conducted by the Duke Center for Child and Family Policy for the Administration for Children and Families (ACF), described in a series of four reports referenced throughout the brief, which can be accessed online at <https://www.acf.hhs.gov/opre/research/project/toxic-stress-and-self-regulation-reports>.

Self-Regulation: What is it and why is it important?

Self-regulation has a foundational role in promoting wellbeing across the lifespan, including physical, emotional, social, and economic health and educational achievement. Self-regulation can be defined as **the act of managing thoughts and feelings to enable goal-directed actions**. This means, for instance, finding ways to cope with strong feelings so they don't become overwhelming; learning to focus and shift attention; and successfully controlling behaviors required to get along with others and work towards goals. Supporting self-regulation development in early childhood is an investment in later success, because stronger self-regulation predicts better performance in school, better relationships with others, and fewer behavioral difficulties.

Moreover, the ability to regulate thoughts, feelings, and actions helps children successfully negotiate many of the challenges they face, promoting resilience in the face of adversity (For more information, see Report 1: Foundations for Understanding Self-Regulation from an Applied Developmental Perspective, <http://www.acf.hhs.gov/programs/opre/resource/self-regulation-and-toxic-stress-foundations-for-understanding-self-regulation-from-an-applied-developmental-perspective>)

Self-regulation is recognized as one of the key areas of early child development in the *Head Start Early Learning Outcomes Framework* (Administration for Children and Families, 2015:

<https://eclkc.ohs.acf.hhs.gov/hslc/hs/sr/approach/pdf/ohs-framework.pdf>), where skills related to self-regulation are woven into both the Approaches to Learning and the Social/Emotional Development domains. The information in this brief and the referenced reports can be used to complement that of the Head Start Framework, providing an overview of child skills and caregiver practices that are key in the development self-regulation.

By proactively teaching and supporting self-regulation skills across settings, we can help children from all backgrounds enter kindergarten ready to learn.

How does self-regulation develop?

As depicted in the figure, multiple layers of factors contribute to self-regulation, from biological predisposition to caregiver support and environmental context. While biology sets the stage for self-regulation readiness, more complex skills and motivation for self-regulation develop through interaction with caregivers and the broader environment over an extended period from birth through young adulthood (and beyond).

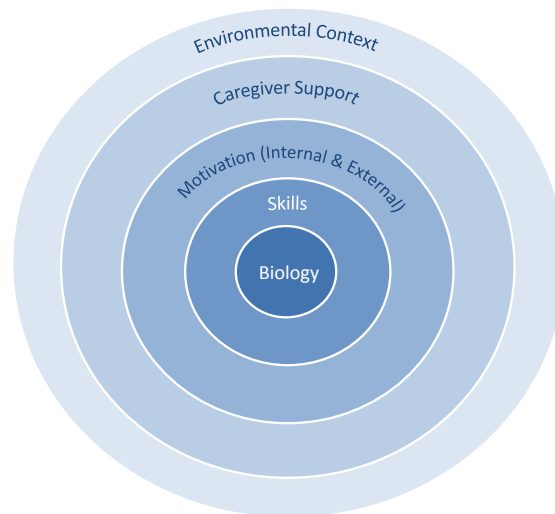
In infancy, the brain is primed to create connections that support the beginnings of self-regulation. Across early childhood, brain-based capacity for self-regulation increases rapidly. Just like with literacy or math, however, this capacity will not be fully realized without support from the environment. For literacy, young children need exposure to print materials in the environment, combined with active instruction, support, and practice. Self-regulation is much the same: children learning self-regulation skills need structured environments, supportive relationships, and direct instruction and coaching in a progression of self-regulation skills.

Just as with literacy, there will be individual differences in development that require different levels of support. For instance, some children may be more temperamentally sensitive and thus more easily overwhelmed by sensory input. Other children may experience more stressors in their environments. Both of these situations can make it harder for children to self-regulate. Nevertheless, with intervention and support aligned with their level of need, children can effectively build skills to manage their thoughts, feelings, and behaviors. For more information on self-regulation development, visit Report 1 in this series: Foundations for Understanding Self-Regulation from an Applied Developmental Perspective, <http://www.acf.hhs.gov/programs/opre/resource/self-regulation-and-toxic-stress-foundations-for-understanding-self-regulation-from-an-applied-developmental-perspective>.

What are the benefits of focusing on self-regulation development in early childhood?

Humans learn more quickly during their first few years than at any other time in their lives. Experiences, particularly those with significant others like caregivers and siblings, literally “wire the brain’s architecture”, laying the foundation for what is to come (see Harvard’s Center on the Developing Child for more information: <http://developingchild.harvard.edu/science/key-concepts/brain-architecture/>). Intentional work by adults to promote self-regulation capacity early in the lives of children can help them to develop critical skills like attentional control, problem-solving, and coping strategies for managing distressing environmental or emotional experiences. Capitalizing on the developmental readiness of the earliest years, approaches that systematically combine interventions with supportive caregivers and environments can proactively foster self-regulation skills and help children enter kindergarten ready to learn.

Factors Contributing to Self-Regulation Enactment



This is not to say that early childhood is the only opportunity for self-regulation intervention—indeed, self-regulation continues developing at least through young adulthood, if not across the lifespan. However, laying the foundation early may prevent childhood struggles, avoiding later need for more intensive interventions, and thus may prove more cost-effective in the long run.

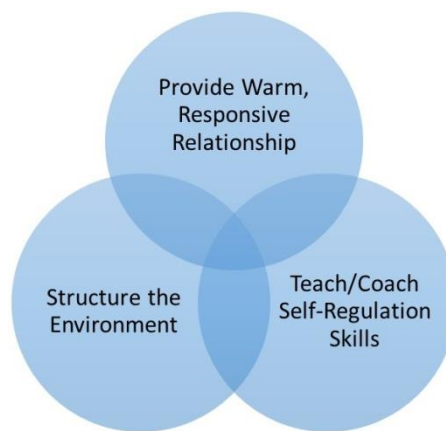
How important are parents and other caregivers in the development of self-regulation?

There is a well-established link between parenting and the development of self-regulation in childhood, summarized in Report 2: A Review of Ecological, Biological, and Developmental Studies of Self-Regulation and Stress, <http://www.acf.hhs.gov/opre/resource/self-regulation-and-toxic-stress-a-review-of-ecological-biological-and-developmental-studies-of-self-regulation-and-stress>. As indicated by almost 50 studies identified in a comprehensive literature review, parental warmth, responsiveness, and sensitivity support self-regulation development and may buffer the effects of other stressors in the family and environment. Parents are not the only caregivers shaping the lives of young children, however. Child care providers, preschool teachers, extended family members, and other adults who spend significant time caring for children can be instrumental in supporting their development of self-regulation.

During the first years of life, caregivers are particularly central to development. Young children are dependent upon their caregivers to create a safe, nurturing, and appropriately stimulating environment so they can learn about the world around them. There are three broad categories of support that caregivers can provide to young children to help them develop the foundational self-regulatory skills that they will need to get the best start in life. **Together, these describe the supportive process of “co-regulation” between adults and children:**

- **Provide a warm, responsive relationship** where children feel respected as individuals, comforted and supported in times of stress, and confident that they will be cared for no matter what. This positive relationship will promote self-efficacy and allow children to feel secure enough to practice new skills and learn from mistakes.
- **Structure the environment** to make self-regulation manageable, providing a buffer against environmental stressors. This means creating an environment that is physically and emotionally safe for children to explore and learn at their level of development without serious risk to their wellbeing. Consistent, predictable routines and expectations likewise promote a sense of security by providing clear goals for behavior regulation.
- **Teach and coach self-regulation skills** through modeling, instruction, opportunities for practice, prompts for skill enactment, and reinforcement of successive approximations. Like a coach on a sports team, caregivers should first instruct children in skills, and then provide needed supports, or scaffolding, for self-regulation enactment in the moment.

How to Co-Regulate



Co-regulation will look different at different ages as children’s capacity for self-regulation grows, but remains a critical component of self-regulation across development. Caregiver capacity for co-regulation will depend, in large part, on that caregiver’s *own* self-regulation skills. Young children are incredibly sensitive to the emotions and behaviors of adults. Adults who are themselves feeling overly stressed may have a harder time calming a young child and, thus, may actually increase that child’s agitation, which in turn makes it harder to soothe them. Caregivers who focus on improving their own coping and calm-down skills will build their own self-regulation, provide a more calming influence to children in their care, and be better able to teach these same skills to children as they grow.

What does self-regulation look like during early childhood?

Self-regulation skills and capacity change considerably over the first five years of life, based in part on cognitive and motor skill development. Here are examples of self-regulation skills that children might be ready for, by developmental age group.

In **infancy**:

- Shifting attention or averting gaze when overwhelmed
- Self-soothing by sucking fingers or a pacifier to reduce distress

In **toddlerhood**:

- Focusing attention for short periods
- Adjusting behavior to achieve goals
- Beginning to label feelings
- Briefly delaying gratification
- Turning to adults for help with strong feelings

In **preschool-aged** children:

- Recognizing a growing array of feelings in self and others
- Identifying solutions to simple problems
- With support, using strategies like deep breaths and self-talk to calm down
- Focusing attention and persisting on difficult tasks for increased lengths of time
- Perspective-taking and early empathy

What does effective co-regulation look like during early childhood?

Just as child self-regulation skills change as they grow and develop, so do their needs for co-regulation support from their caregivers.

Caregiver capacity for co-regulation depends on the caregiver’s own self-regulation skills.

In **infancy**, babies require adults to manage a large portion of their regulatory needs, from feeding to temperature control to management of environmental stimuli. Infants react physically to the sensory information around them, with little capacity to change their experience. They need adults who are sensitive to their cues, responsive to their needs, and able to provide a soothing presence in times of distress.

Toddlers are beginning to build motor and language skills that allow them to control some aspects of their environment, like moving away from a loud noise or asking for something to eat. They continue to have strong emotions that far outweigh these emerging skills, however. In this developmental period, caregivers can begin to purposely teach and model skills like waiting (i.e., brief delay of gratification) and using simple words to communicate feelings and needs. Adults are still largely responsible for structuring a safe and manageable environment, as well as for providing comfort and reassurance when toddlers are upset.

During the **preschool years**, children experience rapid growth in areas of the brain associated with self-regulation, which makes them developmentally much more prepared to learn and use self-regulation skills. Likewise, growing language skills during the preschool years allow children to use words in managing their thoughts and feelings and asking for help. This is the perfect time for caregivers to actively teach and coach skills like emotion identification, problem-solving, perspective-taking, and calm-down strategies. Children will need considerable repetition, prompting, and practice in using these new skills. Caregiver modeling of these skills is also important, as children watch adults closely to learn how they should behave. Co-regulation in this stage will include teaching and communicating clear rules and expectations and using consistent natural or logical consequences provided firmly but calmly. As in earlier developmental periods, preschool children continue to need structured, predictable environments and warm, responsive caregivers that provide them a supportive context in which to practice new skills.

Self-Regulation Interventions: What is the evidence of effectiveness in early childhood?

There are many interventions available that address some or all components of self-regulation development. Based on a review of studied preventive interventions between 1989 and 2013, 102 studies were that evaluated interventions targeting self-regulation development in early childhood. Across these studies, there are two approaches most commonly used to promote self-regulation, either alone or in combination: teaching caregivers how to co-regulate, and providing children with age-appropriate skills instruction. Both of these approaches have strong evidence of effectiveness. The best approach to use may vary by age group, setting, or child and family risk status. Findings for infants/toddlers and preschool-aged children are summarized below. For information on the methodology or detailed findings of this review, see Report 3: A Comprehensive Review of Self-Regulation Interventions from Birth through Young Adulthood, <http://www.acf.hhs.gov/opre/resource/self-regulation-and-toxic-stress-report-3>.

Infants and Toddlers

There are relatively few programs for the **infant/toddler** age group that explicitly address self-regulation development as a goal of intervention. Those that exist typically target caregiver co-regulation, are delivered by clinicians or other clinically-trained staff, and often focus on at-risk families. Typical intervention length is 6 to 12 sessions, and most are delivered through home visits. Caregiver interventions often focus on attachment/relationship building, sensitivity to child cues, and (for toddlers) age-appropriate behavior management strategies like redirection. In addition, many caregiver interventions target the caregiver's own



There are two primary approaches to self-regulation intervention used either alone or in combination:

- 1. Teaching caregivers how to co-regulate*
- 2. Directly teaching children age-appropriate self-regulation skills*

capacity to self-regulate, both to support caregiver coping and calm-down skills and to help caregivers learn how to co-regulate.

There is considerable variability in the effects of self-regulation interventions on infants and toddlers, with some interventions showing large positive effects and some finding no significant change in child self-regulation-related outcomes. The most common area that improves with intervention is child attachment, arguably the most critical outcome for this age group due to its long-term impact on self-esteem and interpersonal relationship success. More than a third of the studies also found substantial effects for child behavior regulation, such as cooperation and rule-following.

More consistent effects are evident for caregivers, in keeping with the focus on co-regulation in this age group. These caregiver gains may pay off in improved child self-regulation as children grow. More specifically, results for caregivers show medium to large effects in the following areas:

- Increased warmth and responsivity to infants and toddlers, with improved ability to read child cues
- Changes in attitudes and beliefs, such as parenting self-efficacy and age-appropriate developmental expectations
- Improved parenting skills such as positive behavior management (for toddlers), supervision, and communication with their child

Preschool-aged Children

Studies of self-regulation interventions are far more numerous for children in the preschool age range than for infants/toddlers. Most are delivered universally within a preschool setting, and about half are taught by classroom teachers. Interventions for this age group typically target child skill-building directly, using explicit teaching and coaching of self-regulation skills over an extended period of time (typically 30 or more lessons). More than half also target parent co-regulation, and one quarter seek to build teacher co-regulation skills including positive behavioral management and classroom climate.

Interventions for preschool children show more consistent effects on self-regulation skills than do studies of infants/toddlers, including significant improvement in child stress levels and regulation of emotions, thoughts, and behaviors. Some studies also show that self-regulation changes lead to improvements in functioning more broadly in areas such as interpersonal skills, language, and learning. These functional outcomes are less directly related to intervention targets, and therefore show more variability of effects than do core self-regulation outcomes.

Interventions for caregivers, though utilized in only 59% of studies, demonstrate substantial gains for both parents and teachers. Similar to infant/toddler programs, parents of preschoolers show medium effects in the following areas:

- Improved co-regulation, including warmth and responsivity as well as skill coaching and support
- Changes in attitudes and beliefs, such as parenting self-efficacy, attitudes about parenting, and parenting satisfaction
- Improved parenting skills such as positive behavior management, supervision, and communication

Interventions targeting teachers produce medium to large improvements in classroom climate: after intervention, teachers have classrooms that are rated as more welcoming, supportive, and positive.

What are the key considerations for promoting early childhood self-regulation in practice?

Given the foundational nature of self-regulation for functioning across domains, careful consideration of systematic regulatory skill-building in early childhood has the potential for broad long-term benefits. Based on a theoretical model and review of the intervention literature, suggestions for early childhood leaders to implement preventive self-regulation education, intervention, and environmental scaffolding are as follows:

1. **As a low-intensity support for all parents and guardians, provide easily-accessible information about self-regulation development and caregiver co-regulation.** Though parents experiencing significant stress and adversity will likely require more intensive support (see recommendation 2), parent education can proactively promote caregiver attention to self-regulation and co-regulation. In addition, information provided universally across a whole community can contribute to shared language, knowledge, and norms for positive, supportive parenting. Self-regulation and co-regulation information could be provided to parents as tip sheets, informal discussion, and/or more formal informational seminars available in locations already frequented by parents, such as: primary care/well visits, child care centers, children’s museums, and other family-friendly settings. Key components of early childhood co-regulation to promote include:
 - a. Interacting in warm, responsive ways
 - b. Recognizing and responding to child cues
 - c. Providing physical and emotional comfort when child is distressed
 - d. Modifying the child’s environment to decrease demands and stress
 - e. Providing consistent routines and structure
 - f. Modeling self-calming strategies
 - g. Teaching rules, redirecting, and using effective, positive behavior management strategies that are age-appropriate
 - h. For preschool children: intentional modeling, monitoring, and coaching of specific, targeted self-regulation skills such as identifying and expressing emotion, calming down, waiting, and solving problems

Resources and informational materials on these topics may be already available through well-established parenting programs such as Triple P, Parents as Teachers, or Incredible Years, as well as through the US Department of Education: <https://www2.ed.gov/about/inits/ed/earlylearning/talk-read-sing/feelings-families.pdf>

2. **For parents experiencing high levels of stress or adversity, deliver interventions with demonstrated effects on parental self-regulation and co-regulation.** In families with risk factors, including teen parents, poverty, and mental health or substance use concerns, targeted interventions show promise for impacting both parent and child outcomes. Given variability in outcomes, programs should be selected carefully. For a list of interventions that have been studied with children 0-5, see pages 3-23

of the Report 3 appendix: Effect Size Outcomes by Intervention and Developmental Groups, http://www.acf.hhs.gov/sites/default/files/opre/appendix_c_final_b508.pdf.

3. **For child care providers, preschool teachers, and home visiting professionals, provide training in co-regulation.** This training would help caregivers to understand their role in supporting self-regulation, both through the structure and content of their interactions with children. Teacher-directed training has the potential to impact a large number of children, supporting self-regulation skill-building as a protective factor for children who are experiencing stress in other areas of their lives. Training for teachers would address topics including:
 - a. Building a positive relationship with each student
 - b. Structuring the environment to reduce regulatory demands and avoid over-stimulation
 - c. Proactively structuring the day to provide a predictable routine and prevent common behavior problems
 - d. Teaching rules, redirecting, and using effective, positive discipline strategies that are age-appropriate
 - e. Instructing, monitoring, and coaching specific, age-appropriate self-regulation skills
 - f. Incorporating activities to practice self-regulation skills

Resources and informational materials on these topics may be already available through well-established programs for early childhood teachers such as Incredible Years or the Pyramid Model, as well as through the US Department of Education:

<https://www2.ed.gov/about/inits/ed/earlylearning/talk-read-sing/feelings-teachers.pdf>

4. **Identify ways to support child care staff in their own self-regulation capacity.** Caregivers will only be effective at co-regulation if they can successfully self-regulate. Staff supports may include mindfulness instruction, reflective supervision, and opportunities for personal “time outs” when needed.
5. **For preschool-aged children, deliver well-evaluated child skills curricula that have been shown to enhance regulation.** Direct skills instruction and coaching in areas such as emotion identification, problem solving, and anger management during preschool will lay the foundation for school readiness and social-emotional success. Implementation of such curricula by early childhood education teachers can be supported by technical assistance providers or mental health consultants to ensure fidelity and effectiveness. Again, for a list of interventions that have been studied with children 0-5, see pages 3-23 of the Report 3 appendix: Effect Size Outcomes by Intervention and Developmental Groups, http://www.acf.hhs.gov/sites/default/files/opre/appendix_c_final_b508.pdf.
6. **For children with significant existing self-regulation challenges, provide more intensive support and intervention from a mental health consultant or behavioral specialist.** Caregivers for these children will also benefit from instruction and coaching on providing consistent types of support in the classroom and at home.

Summary

Self-regulation plays a fundamental role in wellbeing, and the first five years of life are foundational in building skills that can last a lifetime. Comprehensive interventions and environmental supports using a self-regulation framework can produce broad, substantive changes in both child self-regulation and caregiver co-regulation skills. Applied systematically and proactively, this self-regulation support can promote a solid foundation in skills needed for social, emotional, behavioral, and academic success during the school years. Such early investment is expected to pay large dividends in self-regulation capacity and outcomes across the lifespan. Moreover, because stronger self-regulation predicts higher income, better financial planning, lower rates of substance use and violence, and decreased long-term health costs, self-regulation investment can help us to build healthier communities for our families.

For more information on how self-regulation interventions could be applied in programs supported by ACF, visit Report 4: Implications for Programs and Practice, <http://www.acf.hhs.gov/opre/resource/self-regulation-and-toxic-stress-implications-for-programs-and-practice>.

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