

**Self and Co-Regulation:
Development, Promotion, and Principles**

**Quantum Units
Education**

Affordable. Dependable. Accredited.

www.quantumunitsed.com

Co-Regulation From Birth Through Young Adulthood: A Practice Brief

Adult caregivers such as parents, teachers, coaches, and other mentors play a critical role in shaping and supporting self-regulation development from birth through young adulthood through an interactive process called “co-regulation.” This brief builds on reviews of the theoretical and intervention literature to provide caregivers and program administrators with guidelines for effective co-regulation support at each stage of development. 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>.

Co-regulation: What is it and why is it important?

Self-regulation has become recognized for its foundational role in promoting wellbeing across the lifespan, including educational achievement and physical, emotional, social and economic health. Self-regulation can be defined as the act of managing thoughts and feelings to enable goal-directed actions, and includes a variety of behaviors necessary for success in school, relationships, and the workplace (Murray, Rosanbalm, Christopoulos, & Hamoudi, 2015: 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>). Although it may sound like something internal to an individual, self-regulation develops through interaction with caregivers such as parents, teachers, coaches, and other mentors. Further, self-regulation development is dependent on predictable, responsive, and supportive environments. Because caregivers are vital to self-regulation development, teaching adults in caregiving roles to promote self-regulation can be powerful.



The supportive process between caring adults and children, youth, or young adults that fosters self-regulation development is called

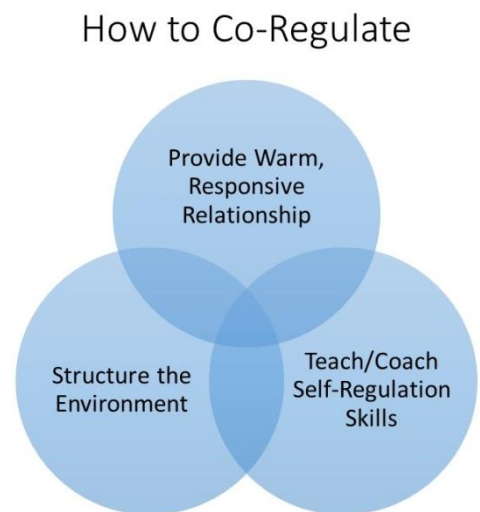
“co-regulation.” This term began as a description of adult support for infants, but is now used to describe an interactive process of regulatory support that can occur within the context of caring relationships across the lifespan. Co-regulation will look different at different ages as child capacity for self-regulation grows, but remains a critical resource across development. This brief describes co-regulation skills and strategies for caregivers at each stage from birth through young adulthood.

What caregiver behaviors contribute to co-regulation?

In this brief, the term “caregiver” is used to describe any adult who provides care and support to a child, youth, or young adult. This includes but is not limited to parents, guardians, teachers, child care providers, coaches, youth group leaders, and other mentors. Regardless of their role, a caregiver’s warmth, responsiveness, and sensitivity support self-regulation development and may buffer the effects of adverse childhood experiences. Effective co-regulation by a supportive caregiver will promote self-efficacy and allow children, youth, and young adults to feel secure enough to practice new skills and learn from mistakes.

There are three broad categories of support that caregivers can provide to children, youth, and young adults that will help them to develop foundational self-regulatory skills and expand these skills to meet increasingly complex regulatory needs as they grow (Murray et al., 2015):

- **Provide a warm, responsive relationship** by displaying care and affection; recognizing and responding to cues that signal needs and wants; and providing caring support in times of stress. Caregivers can build strong relationships with children, youth, and young adults by communicating, through words and actions, their interest in the young person’s world, respect for the young person as an individual, and commitment to caring for the young person no matter what (i.e., unconditional positive regard).
- **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, youth, and young adults 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, in addition to well-defined logical consequences for negative behaviors.
- **Teach and coach self-regulation skills** through modeling, instruction, opportunities for practice, prompts for skill enactment, and reinforcement of each step towards successful use of skills. Like a coach on a sports team, caregivers should first teach skills, and then provide needed supports, or scaffolding, for self-regulation enactment in the moment.



What about caregiver self-regulation?

The first thing for caregivers such as parents, teachers, coaches, and other mentors to focus on is their *own* capacity for self-regulation. To co-regulate successfully, caregivers will need to:

- Pay attention to their own feelings and reactions during stressful interactions with a child, youth, or young adult.
- Pay attention to their own thoughts and beliefs about the behaviors of others.
- Use strategies to self-calm and respond effectively and compassionately. Caregivers greatly benefit when they take a moment for some deep breaths or self-talk. When a caregiver responds calmly to a child, youth, or young adult, it helps to keep the young person's feelings from escalating and also models regulation skills.

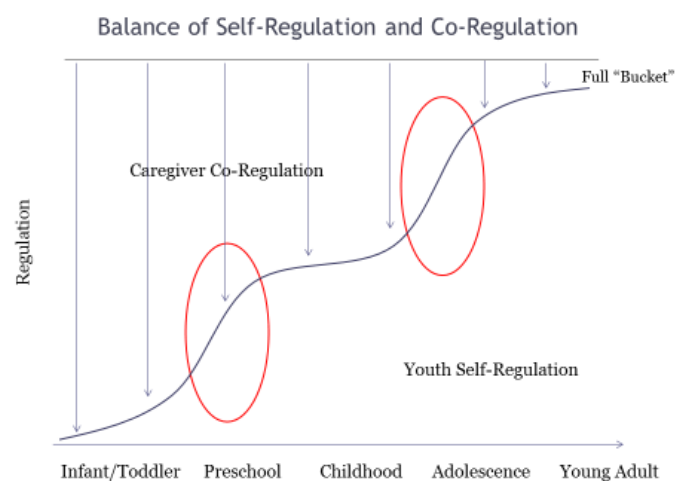
Self-regulation during a stressful interaction with a child, youth, or young adult is no easy task, particularly when there are multiple activities and stressors vying for a caregiver's mental and emotional resources. Caregivers may need support, practice, and coaching from friends/family or professionals to build their own coping and calm-down skills, which in turn will aid them in promoting these skills for the children, youth, and young adults in their care.

How much co-regulation is needed?

Capacity for self-regulation develops over time, from infancy through young adulthood (and beyond). Consequently, the amount of co-regulation a child, youth, or young adult needs will vary as they grow. The graph below presents a theoretical model of the balance of a young person's capacity for self-regulation and need for adult support. This is merely a conceptual depiction of normative growth in self-regulation capacity; the exact ratio will vary by individual and situation. One way of thinking about this ratio is that, for optimal functioning in the moment, children, youth, and young adults need to have their self-regulation "bucket" filled. Depending on developmental stage, environmental circumstances, and individual differences, young people themselves have the capacity to fill their self-regulation bucket to varying levels. To successfully manage their thoughts, feelings, and behaviors, they need caregivers to provide co-regulation that fills the remainder of the bucket.

As illustrated by the red ovals in the graph below, there are two clear developmental periods where child and youth abilities to self-regulate can increase dramatically due to corresponding changes in brain development. These are early childhood and early adolescence. During these periods, intervention and co-regulation support can capitalize on child and youth readiness to build and practice new self-regulation skills. Support in these developmental windows may be particularly well-timed to smooth life transitions, first into school and then into adulthood.

As a child's ability to self-regulate increases, less caregiver co-regulation is required. For an infant, co-regulation support will encompass a large proportion of regulatory needs: babies need caregivers to feed them when they are hungry, help them sleep when they are tired, and give cuddles when they are overwhelmed. An older youth, on the other hand, may only need co-regulation support during complex life transitions or



when emotionally overwhelmed. To the extent that either a young person's skills or caregiver support are limited, the "regulation bucket" may be only partially filled, which will directly affect that young person's emotions, cognitions, and behavior. When regulation continually falls short, functional challenges will be evident, and may result in significant social-emotional, behavioral or physical health concerns.

Do all children, youth, and young adults require the same level of co-regulation support?

Though all children, youth, and young adults need co-regulation support, there are individual differences in self-regulation capacity and need for co-regulation support. These differences may be based on internal factors such as biology, temperament, and/or skill development. They may also result from environmental factors including experiences of stress and adversity. Children, youth, and young adults with self-regulation difficulties due to either internal or environmental factors may have more sensitized neurological responses to interpersonal and environmental stimuli, and may need greater levels of caregiver support, skill-building, and coaching. These young people may be more easily overwhelmed by physical sensations (e.g., sound, touch, sight) and by emotions, and are likely to have strong reactions when they find the environment overstimulating. Effective co-regulation, including the presence of a supportive caregiver in a calm environment, can provide safety and stability for these children, youth, and young adults, creating a space where they can begin to learn and enact self-regulatory skills. For more information on the links between stress, adversity, and self-regulation development, see the second report in this series: 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>.

Co-Regulation Support by Developmental Age Group

In general, as depicted in the graph on page 3, need for co-regulation declines with age. Along with this, the types of co-regulation that are most needed and beneficial shift across development. For instance, adults bear the responsibility to manage all aspects of the environment for young children. As children grow, they gain capacity to manage some aspects of the environment for themselves, thus the role of the adult shifts to supporting and monitoring environmental control. Similarly, skills instruction becomes significant in preschool, but diminishes in relevance over time if skills are successfully acquired and enacted. Again, as children move towards young adulthood, adult caregivers shift to a role of monitoring and supporting skill enactment. In contrast, maintenance of a warm caregiving relationship remains central to co-regulation across all age groups. The presence of a parent or other mentor who cares unconditionally is always supportive of self-regulation, particularly in times of stress.

Expanding on the early childhood co-regulation information presented in Promoting Self-Regulation in the First Five Years: A Practice Brief <http://www.acf.hhs.gov/programs/opre/resource/promoting-self-regulation-in-the-first-five-years> , the sections that follow describe common co-regulation supports that children, youth, and young adults will need at different developmental ages.

What co-regulation support do young children need?

As summarized in Murray et al. (2015), self-regulation begins to develop at birth and expands rapidly over the first five years of life. Co-regulation, likewise, should shift to complement this development.

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 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 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. 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. Likewise, caregiver modeling of these skills is 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 a supportive context in which to practice new skills.

What co-regulation support do elementary-aged children need?

In **elementary school**, children gain more control over their attention, emotions, and behavior. They have a growing ability to manage their impulses and delay gratification, and they become aware of their

Co-Regulation for Young Children

In Infancy:

- Provide warmth and nurturing
- Anticipate needs and respond to cues
- Provide structure and consistent routine
- Provide physical and emotional comfort when child is distressed or dysregulated: speak calmly and give affection
- Modify the environment to decrease demands and stress

In toddlerhood, in addition to above:

- Teach age-appropriate rules and expectations
- Label emotions; teach and coach use of words to express emotions
- Model waiting and self-calming strategies
- Redirect child attention to regulate behavior

In preschool-aged children, in addition to above:

- Teach and coach identification of solutions to simple problems
- Coach and incentivize rule-following and task completion
- Model, prompt, and reinforce self-calming strategies like taking a deep breath
- Provide external structure for calming down, including a calm-down space and materials
- Provide clear and consistent consequences, carried out in firm yet calm manner

own thinking processes, emotions, and decision-making. At the same time, behavioral expectations and social interactions become more complex in the school environment. This is a relatively stable period developmentally, which gives caregivers extensive opportunities to instruct and coach children in using self-regulatory skills. Ongoing co-regulation support across the elementary years will help skills crystalize and grow in sophistication over time in preparation for the increased demands of adolescence. Skills for caregivers to teach and practice with children during the elementary years include:

- Emotional literacy, including recognizing emotions and using words to express more complex feelings
- Emotion regulation:
 - Ignoring things that are mildly irritating, distracting, or frustrating
 - Calming down using strategies like deep breathing, relaxation, imagery, or positive self-talk
- Social flexibility, such as trying a friend's idea or considering others' perspectives
- Social skills, like being patient and taking turns
- Paying attention and staying focused
- Working independently
- Persistence with difficult tasks
- Problem-solving skills and flexible thinking

Co-Regulation for Elementary-aged Children

- Continue to provide a warm, nurturing, supportive relationship
- Assist in problem-solving more complex academic, behavioral, and social situations
- Model conflict resolution strategies
- Prompt and coach coping skills and calm-down strategies, including self-talk and relaxation
- Teach and support organization and planning skills needed for academic success
- Provide opportunities to make decisions and self-monitor behavior
- Continue to provide clear rules, structure, and consequences in a calm manner

What co-regulation support do adolescents need?

In **adolescence**, as shown in the graph on page 3, brain architecture once again undergoes major changes, bringing both benefits and challenges for self-regulation. In early and mid-adolescence, brain systems that process emotions and seek rewards are more developed than the cognitive control systems responsible for good decision-making and future planning. This means that teens are biased towards choices that offer short-term reward rather than long-term benefit, and their emotions heavily influence their decisions. Given that poor decisions during adolescence can have long-term negative consequences, this is not the time for caregivers to step back from their supportive roles; co-regulation support during this developmental period is crucial.

Though adolescents are developmentally separating from caregivers and seeking more independence, maintenance of a warm and accepting relationship with a caring adult is as important as ever. Adolescents will need caregivers who can listen supportively in times of strong emotion, provide space and support for youth to calm-down in times of conflict, and coach coping skills for a multitude of stressful situations. Likewise, though adolescents do need opportunities for independent decision-making and action, they have equal need for caregivers to monitor their actions, protect them from dangerous situations, and support responsible choices. Skills for caregivers to teach and coach across adolescence include:

- Awareness of and attention to emotions
- Strategies to tolerate and manage normal levels of stress/distress
- Strategies for seeking help when stress is unmanageable or the context is dangerous
- Effective organization, time management, and task completion skills
- Setting longer-term goals and self-monitoring to achieve them
- Problem-solving complex life situations
 - Effective decision-making “in the moment”
 - Anticipating challenges and problem-solving in advance
- Decision-making with a future perspective
- Compassion for self and others

Co-Regulation for Adolescents

- Provide a warm, responsive relationship
- Provide support and empathy in times of intense emotion
- Model, monitor, and coach more sophisticated self-regulation skills across different contexts
- Monitor and limit opportunities for risk-taking behavior
- Provide opportunities to make decisions and self-monitor behavior in less risky situations
- Give time and space to calm down in times of conflict
- Monitor and prompt use of organizational and planning skills for successful task completion
- Continue clear rules, boundaries, and consequences to incentivize good choices

What co-regulation support do young adults need?

As adolescents mature into young adults, life transitions with increased responsibilities will create new demands on their self-regulation skills. At the same time, societal demands and consequences reflect an expectation of maturity. Across this span of emerging independence, co-regulation continues to be a critical support for responsible, goal-oriented behavior, effective decision-making and long-term wellbeing. For young adults, co-regulation becomes one specific aspect of the broader “social support” that they need. Co-regulation becomes necessary when a young adult is struggling with managing their thoughts, feelings, and/or behaviors effectively. In this context, the caregiver intentionally takes a “mentor” type of role, guiding the young adult and supporting skill development and enactment. Skills for caregivers to support and scaffold in young adulthood include:

- Interpersonal and communication skills for healthy relationships
- Decision-making that supports health, wellbeing, and long-term goals
- Job skills such as planning, organization, prioritization, time management, and persistence
- Self-monitoring and self-reward for progress towards goals
- Stress management and strategies to tolerate uncomfortable emotions
- Strategies for calming down before responding in a stressful or emotionally intense situation (e.g., take a deep breath rather than reacting in the “heat of the moment”)

Co-Regulation for Young Adults

- Provide an ongoing warm, supportive relationship
- Provide comfort and empathy during times of strong emotion; prompt and support coping strategies
- Support long-term goal achievement by encouraging effective planning, awareness of consequences, and task completion activities
- Share perspective and provide coaching for complex problem-solving and decision-making
- Ultimately, allow space for the young adult to make his or her own decisions and experience the consequences of those decisions

What do we know about co-regulation interventions across development?

Despite the ongoing need for co-regulation support across development from birth through young adulthood, the proportion of self-regulation interventions that target co-regulation as a mechanism of change declines dramatically across this age range. A recent review of 312 studies of interventions to promote self-regulation in children, youth, and young adults (Murray, Rosanbalm, & Christopoulos, 2016: 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>) found that all infant/toddler interventions and more than half of interventions for preschool-aged children employed a co-regulation component. By elementary school, however, only a third of interventions for child self-regulation included a focus on caregiver co-regulation. This number fell to 20% in middle school, 5% in high school, and 0% in young adulthood, which indicates a missed opportunity to support youth and young adults as they enter more complex environments requiring increasingly sophisticated skills.

Research shows significant benefit from targeting caregivers such as parents, teachers, coaches, and other mentors in interventions that support co-regulation. When evaluated against a comparison group, co-regulation interventions produce significant positive effects across a broad range of outcomes. Parents show improvement in co-regulation skills, attachment and/or relationship with their children, positive behavioral management skills, and knowledge of appropriate developmental expectations. Furthermore, parents report improvement in their own wellbeing in areas like mental health and social support. When teachers are targeted for co-regulation skill development, they likewise show improvements in their classroom climate as well as their co-regulation and self-regulation skills. As noted, these findings are based primarily on studies of co-regulation for caregivers of infant to preschool-aged children, with much less known about how co-regulation interventions work for older youth. The suggestions for co-regulation for older youth in this brief are therefore based on a combination of research evidence and a strong theoretical model.

What are the key considerations for enhancing co-regulation across development?

Self-regulation is a critical developmental task for children, youth, and young adults, with long-term impact across health and wellbeing indicators. Co-regulation is a key component for fostering this development, thus interventions for self-regulation should also focus on regulatory skill-building for caregivers such as parents, teachers, coaches, and other mentors. Given the universal need for and benefits of co-regulation support, a public health approach may be ideal for building awareness and reaching a broad audience. Interventions will be most scalable if they are delivered in settings already frequented by children, youth, and families, such as doctors' offices, child care centers, schools, afterschool programs, mentoring programs, and extracurricular programs. Based on our theoretical model and a review of the intervention literature, our suggestions for supporting co-regulation across development are as follows:

1. **Provide easily-accessible information to parents and guardians about self-regulation development and caregiver co-regulation specific to each developmental stage from birth through young adulthood.** Parent education can proactively promote awareness of co-regulation, while also working to change existing norms and knowledge through widespread, shared information and language. This information could be provided to parents as tip sheets, informal discussion, and/or more formal informational seminars in family-friendly settings. Information could highlight the three key components of co-regulation at each developmental stage:
 - a. **A warm, responsive relationship** where children, youth, and young adults feel secure and cared for
 - b. **Environmental structure** that makes self-regulation manageable and buffers against excessive stress
 - c. **Skill instruction and coaching** to scaffold self-regulation enactmentResources and informational materials on these topics may be already available through well-established parenting programs and human services agencies.
2. **For parents in high-stress situations and environments, 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 parent co-regulation capacity and skills. Given variability in outcomes, programs should be selected carefully. For a list of interventions by age group, see 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 caregivers such as educators, mentors, and staff of child- and youth-serving organizations, provide training in effective co-regulation skills.** The goal of training is to help caregivers understand their roles in supporting self-regulation, both through the structure and content of their interactions with children, youth, and young adults. Once staff have been trained in co-regulation, they can also serve as coaches and role models of co-regulation for parents and guardians, expanding the impact across contexts. Training for caregivers can address topics including:
 - a. Building a positive relationship with each child, youth, or young adult
 - b. Structuring the environment to reduce regulatory demands and support skill enactment
 - c. Communicating clear rules, expectations, and consequences
 - d. Instructing, monitoring, and coaching specific, age-appropriate self-regulation skills
 - e. Incorporating activities to practice self-regulation skillsThere are existing training programs and interventions for teachers and staff that target co-regulation topics, also listed in the Report 3 appendix, http://www.acf.hhs.gov/sites/default/files/opre/appendix_c_final_b508.pdf. These tend to focus on younger children, but could be expanded upon or modified, as needed, to meet the needs of professionals working with older children, youth, and young adults.
4. **Identify ways to support staff of child-, youth-, and family-serving organizations 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.

Summary

For children, youth, and young adults, development of self-regulation is dependent on predictable, responsive, and supportive caregivers and environments. Through an interactive process called “co-regulation,” adult caregivers such as parents, teachers, coaches, and other mentors play a critical role in shaping and supporting self-regulation development from birth through young adulthood. Co-regulation involves three types of caregiver support: a warm relationship, environmental structure, and skills instruction and coaching. These components will look different at different ages as child capacity for self-regulation grows, but co-regulation remains a critical resource for wellbeing into young adulthood. Training and interventions to promote co-regulation can produce significant, substantive changes in parent-child relationships, parenting skills, classroom climate, and caregivers’ own self-regulation. Expansion of effective and consistent co-regulation across child, youth, and young adult settings may form a foundation for strong self-regulation development at a community level. Because stronger self-regulation predicts higher income, better financial planning, lower rates of substance use and violence, and decreased long-term health costs, investment in caregiver co-regulation 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>.



THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

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).

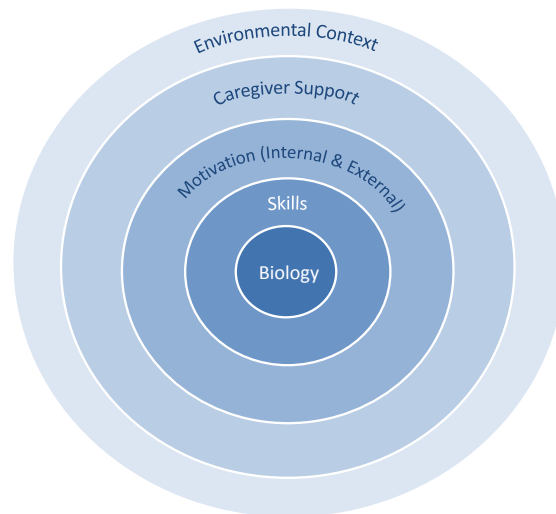
In infancy, the brain is primed to create connections that support the beginnings of self-regulation. Across early childhood, brain-based capacity for self-regulation increases rapidly. Just like with literacy or math, however, this capacity will not be fully realized without support from the environment. 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.

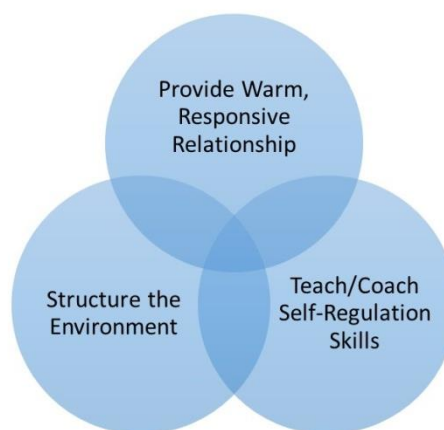
How important are parents and other caregivers in the development of self-regulation?

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>.



Promoting Self-Regulation in Adolescents and Young Adults: A Practice Brief

This brief reviews the importance of self-regulation for adolescents and young adults and provides guidelines for supporting self-regulation development for 14 to 25-year-olds. It is written by Desiree W. Murray and Katie Rosanbalm based on work conducted by a team at the Duke Center for Child and Family Policy for the Administration for Children and Families (ACF), and specifically addresses prevention programs and targeted interventions which could be implemented within ACF programs.

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

Self-regulation has become recognized for its 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**, including a variety of actions necessary for success in school, relationships, and the workplace. Supporting self-regulation development in youth is an investment in society, as stronger self-regulation predicts higher income, better financial planning, fewer risk behaviors like substance use and violence, and decreased health costs. Although many programs for older adolescents and young adults target skills *related* to self-regulation including “soft skills”, life skills, and resilience-building, utilizing a specific self-regulation framework may have benefits for 14 to 25-year-olds. Although evidence for specific self-regulation interventions for this age group are merely emerging, programs can support self-regulation with the promising practices and theoretical guidelines provided in this brief.

• Why focus on self-regulation in older adolescents and young adults?

Some people believe that self-regulation has to be taught in childhood, but actually it is not too late to make a difference in the adolescent and young adult years. Research has now shown that there are major changes in brain architecture that occur during adolescence, making interventions at this age important and timely. In particular during early and mid- adolescence (i.e., 11-15 years), brain systems that seek rewards and process emotions are more developed than cognitive control systems responsible for good decision-making and future planning. This means

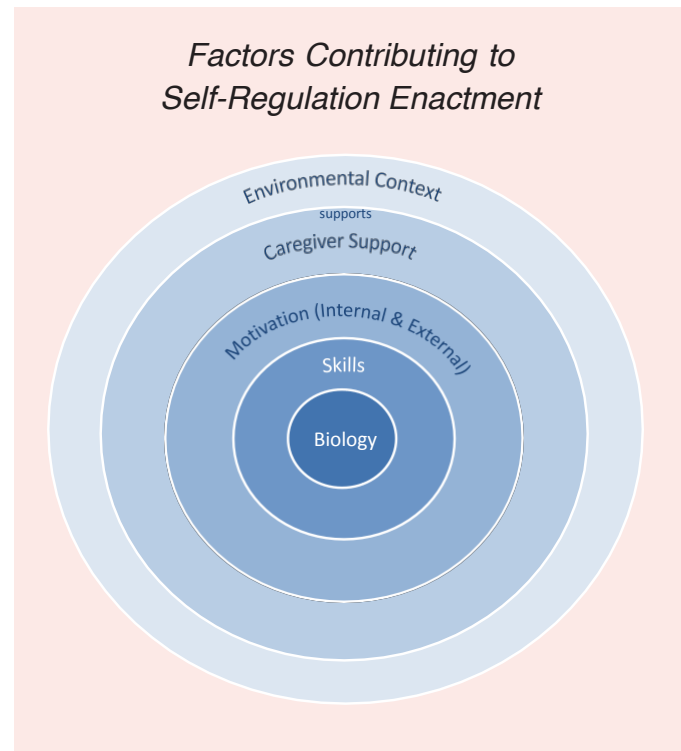
Self-Regulation Skills Developing During Adolescence

- Persisting on complex, long-term projects (e.g., applying to college)
- Problem-solving to achieve goals (e.g., managing work and staying in school)
- Delaying gratification to achieve goals (e.g., saving money to buy a car)
- Self-monitoring and self-rewarding progress on goals
- Guiding behavior based on future goals and concern for others
- Making decisions with broad perspective and compassion for self and others
- Managing frustration and distress effectively
- Seeking help when stress is unmanageable or the situation is dangerous

that self-regulation is developmentally “out of balance” at this age. It also means that tremendous growth in self-regulation skills continues throughout young adulthood, which can be strengthened with instruction and support. Given that poor decisions during adolescence can have long-term negative consequences, self-regulation supports during this developmental period are critical. This is especially important for youth with a history of adverse childhood experiences; for this group, interventions during adolescence and young adulthood may reduce their risk and facilitate resilience.

- **How does self-regulation develop?**

Self-regulation develops and is learned through interaction with caregivers and the broader environment over an extended period from birth through young adulthood (and beyond). Cognitive, emotional, and behavioral self-regulation skills can be taught much like literacy, with structure, support, and coaching over time. Even for youth with self-regulation challenges or delays, effective interventions can strengthen and improve skills; there are ongoing opportunities for intervention across development. However, there are a number of other factors (shown in the box titled “Factors Contributing to Self-Regulation Enactment”) that influence whether a youth will self-regulate in any given situation. Importantly, *although self-regulation is an internal capacity, its development and use depend on predictable, responsive and supportive environments and relationships*. For more information on self-regulation development, visit: <http://www.acf.hhs.gov/programs/opre/resource/self-regulation-and-toxic-stress-foundations-for-understanding-self-regulation-from-an-applied-developmental-perspective>.



- **Do older adolescents and young adults really need caregivers to help them develop self-regulation?**

Contrary to many media messages that suggest teenagers are already independent and don't need adults, caregivers are critical to healthy development throughout adolescence and into young adulthood. Caregivers and mentors are particularly important in the development of self-regulation. As noted in the box on p. 1 titled “Self-Regulation Skills Developing During Adolescence”, there are many critical self-regulation skills under development during this period that involve increased complexity in thinking, managing frustration and stress, and integrating thoughts and emotions in a way that supports goal achievement as well as compassion towards self and others. To help youth gain the full range of skills needed for adulthood, caregivers (including parents and teachers) as well as mentors can:

- **Teach self-regulation skills** through modeling, providing opportunities to practice skills, monitoring and reinforcing adolescents' progress on skill development and goals, and coaching them on how, why, and when to use their skills in increasingly complex situations (e.g., conflicts between work and school demands, living independently).
- **Provide a warm, responsive relationship** where youth feel safe to learn and make mistakes as they increasingly navigate bigger decisions and more challenging situations on their own (e.g., making decisions regarding risk behaviors in the context of peer pressure, raising a child with or without a partner). Caregiving relationships and mentoring can also serve to motivate youth to learn, practice, and implement self-regulation skills.
- **Structure the environment** to make self-regulation manageable, providing a buffer against environmental stressors. This involves limiting opportunities for risk-taking behaviors, providing positive discipline and natural consequences for poor decisions, and reducing the emotional intensity of conflict situations (e.g., giving time and space to calm down as needed).

The three points above describe the supportive process between adults and youth that we call “co-regulation”. Co-regulation provides assistance and support for optimal self-regulation through warm and responsive interactions. Support, coaching, and modeling are provided to facilitate a youth's ability to understand, express, and modulate their thoughts, feelings, and behavior.

- **Why do some youth need more support with self-regulation than others?**

Greater levels of support are needed for youth who have self-regulation difficulties due to individual characteristics or adverse childhood experiences. Individual differences may be due to temperament or genetic factors that influence how youth respond and react to stress. Adverse experiences may include physical or emotional abuse, caregiver substance abuse or mental illness, exposure to violence, and the accumulated burdens of poverty. In addition, youth living in chronic adversity are less likely to have caregivers who themselves have the resources for their own self-regulation and for co-regulation. Such youth are also likely to lack resources and positive climates in their schools, neighborhoods, and communities to support self-regulation development.

Youth with individual or environmental risk factors may have delays in self-regulation development that cause difficulties maintaining positive relationships with others and contribute to disruptive and risky behaviors. They may over-react in stressful situations and have trouble using effective coping strategies. Moreover, their expectations for the future may be limited, which may reduce their motivation and long-term goal-setting. Thus, youth who experience adversity are vulnerable to a range of negative, lifelong health and mental health difficulties without intervention. Fortunately, evidence suggests that *interventions focused on skill instruction, caregiver support, and environmental context can reverse these effects and improve long-term outcomes.*

- What's the big deal about stress? Isn't it good for us?

Stress is one of the biggest challenges that youth face in peer relationships, at school, home, and work. Although manageable stress may build coping skills, ongoing high intensity stress that overwhelms existing skills and support can create toxic effects that negatively impact development and produce long-term changes in brain architecture. In fact, *the development of self-regulation can be disrupted by prolonged or pronounced stress and adversity including poverty and trauma experiences*. Ongoing, overwhelming experiences of stress can physically change the wiring of the brain to rely more heavily on emotional reactions than on reflection, reasoning, and decision-making. These changes make youth more sensitive and reactive to later experiences of stress, which may be adaptive in some situations but is generally associated with negative outcomes. For more information on the relationship between stress and self-regulation, visit: <http://www.acf.hhs.gov/programs/opre/resource/self-regulation-and-toxic-stress-a-review-of-ecological-biological-and-developmental-studies-of-self-regulation-and-stress>.

- What is the impact of self-regulation interventions during adolescence?

The small but growing body of research on preventive self-regulation interventions for older adolescents and young adults is described in an OPRE report titled “A Comprehensive Review of Self-Regulation Interventions from Birth through Young Adulthood”. Findings reviewing 299 interventions across ages show that **positive and meaningful changes can result from several different intervention approaches** including conflict resolution, anger coping, stress management, resiliency training, and a variety of mind-body and mindfulness interventions. More specifically, results from 60 studies of intervention with high schoolers and young adults show:

- Strong and consistent improvement in cognitive regulation
- Small but significant improvements in health, mental health, and delinquency
- Substantial benefits from mindfulness programs in particular, across both cognitive and emotional regulation, as well as for stress and mental health

However, existing programs lack the comprehensive approach recommended in this brief. Perhaps because of this, outcome effects vary greatly across the different interventions reviewed, with many finding no clear benefits. Existing interventions would be strengthened by the following:

- *A more intentional and targeted focus on self-regulation*, where cognitive and emotional regulation skills and their integration are systematically taught with ongoing coaching, reinforcement, and support. Many current programs are very broad and diffuse, which may weaken the impact on specific self-regulation skills.
- *A greater focus on emotional regulation (i.e., managing distress and strong, negative emotions and fostering empathy and compassion for self and others)*. This is particularly important given the nature of development and social relationships in adolescence.

Self-regulation skills may be included in “soft skills” or life skills training as part of mentoring, youth employment or leadership programs, but these tend to be very broad in focus, without the intentional and targeted skill-building recommended.

- *Inclusion of parents, teachers, or mentors who can serve as self-regulation coaches.* Self-regulation coaching for adolescents will likely require training, as this goes beyond simply serving as a role model.

Although not the focus of the current work, it should be noted that there is also considerable evidence of the benefit of clinical interventions focused on self-regulation for youth who may require a higher level of intervention.

For more information on the effects of preventive self-regulation interventions that have been studied for high schoolers and young adults (as well as other ages), visit:

<https://www.acf.hhs.gov/opre/resource/self-regulation-and-toxic-stress-report-3>

• How can programs support self-regulation development in older adolescents and young adults?

As described above, types of interventions that appear promising for self-regulation development in 14 to 25-year-olds who may not yet warrant mental health treatment include: conflict resolution, anger coping, stress management, resiliency training, and a variety of mind-body and mindfulness programs. Note that not all programs have proven effective and not all have been used with at-risk youth or youth living in adversity. Given these limitations, specific interventions should be selected carefully. Skills curricula for existing programs can be reviewed to determine if they address the specific self-regulation skills described above (e.g., persisting, problem-solving, delaying gratification, goal setting and monitoring, decision-making, managing negative emotions and stress, and help-seeking). In addition, co-regulation supports from caregivers are a critical supplement to skills training.

Mind-body interventions referenced here include yoga, meditation, and martial arts. Mindfulness is an increasingly mainstream technique of intentionally focusing attention on one's emotions and thoughts in the present moment, and accepting these thoughts and feelings without judgment.

General guidelines for implementing preventive self-regulation programs based on the review of theoretical and empirical literature described above are as follows:

1. Provide interventions at varying levels and intensity depending on the youth's context and needs.
 - a. Use universal approaches for building the self-regulation of all youth and to promote a positive climate in schools and other settings. In schools, skills curricula may be provided as part of health education classes and can be supported by positive behavior systems and counseling programs.
 - b. When possible, decrease environmental stressors for youth living in adverse environments, as they are vulnerable to self-regulation challenges. Caregivers are an important buffer for youth against the negative impact of stress.
 - c. At-risk youth would benefit from more intensive skills support that could be provided through mentoring, leadership, or youth employment programs as part of "soft skill" or non-core job skills training.

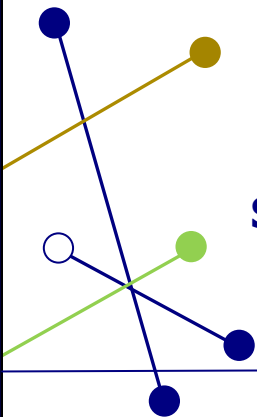
- d. Provide co-regulation supports from a trained self-regulation “coach” for youth showing self-regulation difficulties. Coaching would involve clear self-regulation goals and intentional instruction and skill support. This could be a mentor or job coach from any number of community agencies.
2. Given the gap between adolescents’ emotional and cognitive control systems in the brain for middle and high school age youth, it is important to target emotion regulation skills. Teaching emotion regulation skills such as accepting or managing negative feelings can help adolescents better balance their emotions. When thoughts and emotions work together, it supports youth in making more effective decisions, solving problems, and achieving goals.
3. Include parents, teachers, or mentors in any self-regulation intervention. Provide these caregivers and other supportive adults with assistance in building their own self-regulation skills in addition to coaching them on strategies to strengthen relationships and provide co-regulation for the youth.

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

- **What’s the bottom line about older adolescents, young adults, and self-regulation?**

Adolescence and young adulthood are times of both risk and opportunity with regard to self-regulation. Changes in the brain prime youth for substantial gains in self-regulation skills and capacity, while societal expectations of responsibility and consequences increase. Self-regulation interventions can help to prepare youth for employment and self-sufficiency, paving a path towards successful adulthood. Current research suggests that such outcomes can be supported with intentional focus on teaching and supporting specific cognitive, emotional, and behavioral self-regulation skills in combination with caregiver or mentor support and structure in the context of a warm relationship. Successful investments in youth benefit society as a whole by strengthening the workforce, increasing economic stability, and reducing costs for social services and the justice system.





Seven Key Principles of Self-Regulation and Self Regulation in Context

This brief provides a framework for understanding self-regulation and its development in an ecological-biological development context. It is derived from a [larger report](#) on work conducted by the Duke Center for Child and Family Policy for the Administration for Children and Families.

Many different terms have been used to describe one's ability to manage emotions and impulses. Figure 1 illustrates self-regulation as an umbrella term that encompasses many constructs that may be used to describe similar skills and processes.

SEVEN KEY PRINCIPLES OF SELF-REGULATION

1. Self-regulation serves as the foundation for lifelong functioning across a wide range of domains, from mental health and emotional wellbeing to academic achievement, physical health, and socioeconomic success. It has also proven responsive to intervention, making it a powerful target for change.

2. Self-regulation is defined from an applied perspective as the act of managing cognition and emotion to enable goal-directed actions such as organizing behavior, controlling impulses, and solving problems constructively.

3. Self-regulation enactment is influenced by a combination of individual and external factors including biology, skills, motivation, caregiver support, and environmental context. These factors interact with one another to support self-regulation and create opportunities for intervention.



Figure 1

4. Self-regulation can be strengthened and taught like literacy, with focused attention, support, and practice opportunities provided across contexts. Skills that are not developed early on can be acquired later, with multiple opportunities for intervention.

5. Development of self-regulation is dependent on “co-regulation” provided by parents or other caregiving adults through warm and responsive interactions in which support, coaching, and modeling are provided to facilitate a child’s ability to understand, express, and modulate thoughts, feelings, and behavior.

6. Self-regulation can be disrupted by prolonged or pronounced stress and adversity including poverty and trauma experiences. Although manageable stress may build coping skills, stress that overwhelms children’s skills or support can create toxic effects that negatively impact development and produce long-term changes in neurobiology.

7. Self-regulation develops over an extended period from birth through young adulthood (and beyond). There are two clear developmental periods where self-regulation skills increase dramatically due to underlying neurobiological changes— early childhood and adolescence – suggesting particular opportunities for intervention.

UNDERSTANDING SELF-REGULATION IN CONTEXT

Figure 2 presents a comprehensive model of self-regulation enactment which graphically shows the range of factors that influence whether and how well a child or youth may self-regulate in any given situation.

The most internal factor influencing a child’s capacity for self-regulation is comprised of the child’s *biology, genetics, and temperament*, which contribute to individual differences in self-regulation.

The next major influence depicted is the *self-regulation skills* that the child or youth has developed over time, which have often served as a target for interventions. Next is an individual’s *motivation* to self-regulate, which can be derived from either external sources (i.e., rewards and consequences) or internal goals and values (i.e. intrinsic motivation).

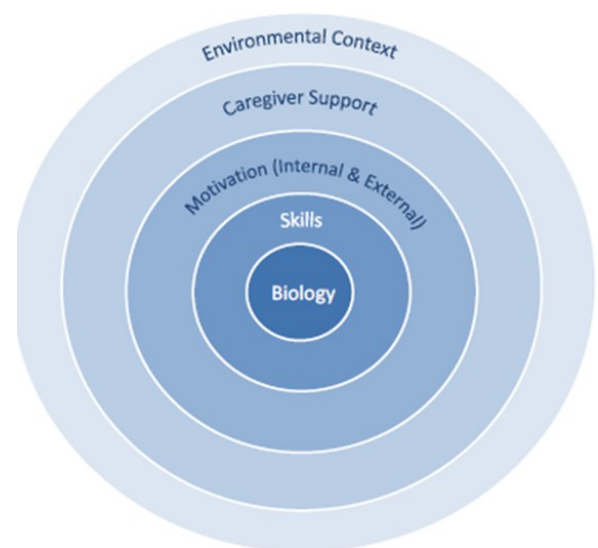


Figure 2

Caregiver support (provided by parents, teachers, or mentors) is the next layer in our model, which serves to strengthen children's self-regulation skills and also buffer them from adverse experiences in the larger environment.

The *environmental context* including the demands or stressors placed on children as well as the external resources available also have a significant influence on their ability to self-regulate.

It should be noted that, although the concentric circles in Figure 2 begin with those factors that are most internal and extend outward to those that are most external, each of these factors may interact with and influence the others. For example, environment may influence a child's biology by shaping brain circuitry, and biology or temperament may influence how a caregiver interacts with a child.

SUMMARY

Self-regulation can be defined from an applied perspective as the act of managing one's thoughts and feelings to engage in goal-directed actions such as organizing behavior, controlling impulses, and solving problems constructively. The act of self-regulating is dependent on several different factors that interact with each other, those that are individual to the child or youth as well as those that are external or environmental, including biology, skills, motivation, caregiver support, and environmental context.

This report is in the public domain. Permission to reproduce is not necessary.

Rosanbalm, K.D. and Murray, D.W. (2017, October).

Caregiver Co-regulation Across Development: A Practice Brief. OPRE Brief #2017-80.
Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families,
U.S. Department of Health and Human Services.

Rosanbalm, K.D. and Murray, D.W. (2017, October).

Promoting Self-Regulation in Early Childhood: A Practice Brief. OPRE Brief #2017-79.
Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families,
U.S. Department of Health and Human Services.

Murray, D.W. and Rosanbalm, K. (2017, February).

Promoting Self-Regulation in Adolescents and Young Adults: A Practice Brief.
OPRE Brief #2015-82. Washington, DC: Office of Planning, Research, and Evaluation,
Administration for Children and Families, U.S. Department of Health and Human Services.

Murray, D.W., Rosanbalm, K., and Christopoulos, C. (2017, February).

Self Regulation and Toxic Stress: Seven Key Principles of Self Regulation in Context.
OPRE Brief #2016-39. Washington, DC: Office of Planning, Research, and Evaluation,
Administration for Children and Families, U.S. Department of Health and Human Services.

Quantum Units Education

Affordable. Dependable. Accredited.

www.quantumunitsed.com