

# CHAPTER 9 - SELF-REGULATION IN CONTEXT

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Self-regulation allows a child to take control of his executive functions. He can then plan, modify and direct his attention, behavior, thinking and emotions so they're healthy and appropriate to his age, his family and to the context. He can organize activities, tasks, his thinking and behaviors so learning and dealing with the world are easier. Undesired behavior, thoughts and emotions can be inhibited in situationally-appropriate ways. New ways of acting, thinking and responding can replace old habits. The child learns ways to help himself identify and remember important and relevant information and make sense of it. He also discovers that he can monitor, reflect on and adjust his thinking, feelings and actions. This helps him identify key features in a situation and think about his options before deciding how to respond or react. Through this process, he learns how to be more flexible in his thinking and responding to events and people around him.

By developing these self-regulation skills, children learn to behave intentionally and thoughtfully. These skills are important for any child but are especially relevant for children who experience uneven development. This includes children with ASC as well as children with other developmental concerns, like Fetal Alcohol Spectrum Disorder, Fragile X and Attention Deficit Hyperactivity Disorder.

## **Self-regulation in the spark\* context**

The goal of *The Autistic Child's Guide* is to inspire people to embrace Behavioral, Cognitive and Emotional Self-regulation as important foundation skills for children with ASC. The skills and strategies presented in spark\* are not exhaustive but represent a solid foundation on which more advanced skills can be built.

spark\* is a **systematic, incremental approach** for teaching self-awareness and self-regulation of three different areas: behavior, cognitive processes, and emotions. As you saw in the lessons outlined in each of the three units, it provides a well-planned process for incrementally developing self-regulation. The skills and strategies learned to deal with Behavioral Self-regulation serve as a base for both cognitive and emotional self-regulation.

spark\* is a **unique evidence-based model** for teaching self-regulation. It has clinical efficacy, being developed and tested over many years in clinical settings. It was tried and tested on individual children and with groups of children with ASC. More recently, controlled pilot studies

have been completed with **spark\*** to examine its impact with school-aged children on the autism spectrum (see pages 277 and 278 for a brief overview).

**spark\*** is informed by current neurology and **addresses five major executive functions** underlying each self-regulation activity. It focuses on increasing each child's conscious control of these key executive functions: inhibitory control, planning and organization, working memory, self-monitoring and cognitive flexibility.

**spark\*** is **suited for children from two years of age through 12 years**. It works progressively from imitation of easy actions so even young child and/or those who are considered 'lower functioning' can be engaged in learning self-regulation. **spark\*** then continues through to self-direction/control of behavior, thinking and emotions.

An important and unique feature of **spark\*** is specific emphasis on **teaching the children to become more resilient and to advocate for themselves**. These skills and strategies will help them cope and learn more readily in everyday settings. Use of self-advocacy marks the emergence of the truly participating and reciprocating person. We help the children be less passive and more active and engaged in their lives.

A critical element in the work to help the children become more resilient is teaching them **self-calming strategies**. The calming and centering we teach children within **spark\*** can have profound effects when practiced consistently. The children learn, first of all, what the sensation of 'calm' feels like. Children on the autism spectrum typically have little idea how their brains and bodies may feel when they're not tense and on high alert. By introducing simple breathing and focusing on the air coming in and out of his body, each child gets an opportunity to let his mind and body be still. This is an important first step to detecting when and where he feels stress and anxiety; he needs the contrast to discern what 'not stressed' feels like. Slow and calm breathing is that simple mechanism. A parent whose child participated in **spark\*** reported how, when her child was escalating into a meltdown, he was able to stop the progression of behavior by starting his Turtle Breathing (introduced in the Behavioral Self-regulation unit). This is an exciting and encouraging account, especially because Turtle Breathing was able to calm him even after he had already started to escalate.

Autonomy, **systematic withdrawal of adult direction** and the child's ability to think and make decisions on his own are important early focuses in **spark\***. Typically, when working with children with autism, the main approaches involve 'doing for' the child and 'doing to' him. When 'doing for' a child, we change key features in his environment in the hope that these will make learning and living easier. For example, we may use visual schedules and streamline his daily environment to make it clearer to the child what is expected. This certainly isn't a bad thing but we want him ultimately to be able to organize himself as well as cope with uncertainty. When we 'do to' our children, we tell them what to do and how to do things and expect him to learn from that experience. There are times and places where this is important and has a great deal of impact. In both approaches, there's a time for this to be reduced and for the child to take more control and responsibility for his actions and thinking. In **spark\***, adult direction and adult organization and planning of learning activities are consistently removed and reduced in order for the child to take control.

**Generalization of self-regulation skills is explicitly taught** through the Awareness of Need, Resilience and Self-advocacy activities. During those phases, a major focus is placed on

extending skills and strategies into day-to-day settings. Each child is helped to identify where and when to use these skills and strategies and how to use them even in the presence of distractions, temptations, and disruptions. This helps generalization as well as flexibility and resilience.

A great deal of emphasis in spark\* is placed on **improving each child's self-awareness and self-monitoring**. The child becomes more aware of his ability to control his body, his attention, his thinking and his emotional responses. Then he's helped to become alert to what he can do and within what contexts. At that point, he can more easily take responsibility for his behavior and thinking. When children with autism are taught to become conscious in these ways, they not only use and generalize the skills and strategies, they remind others about what's appropriate. A therapist who uses spark\* told me about a young boy she had been working with who reminded his mother, when entering their church, that she needed to use her quiet voice. We can be pretty sure our teaching strategies have been effective when we get this type of response from children, especially those on the spectrum. We can also be fairly certain that the child will generalize this learning to new settings, not just the ones we've used in teaching.

spark\* uses a **positive and enjoyable approach** to teaching and learning. Music, rhythm, storybooks, games and many other activities are used to introduce and practice skills and strategies. The Language of spark\* also focuses on the positive. Through the carefully-selected words and phrases, we help to activate each child's thinking. At the same time, we're providing him with a sense of competence, control and participation. There's clear emphasis on building the child's sense of self-efficacy, or belief in himself as a learner.

Earlier<sup>1</sup> it was suggested that people with ASC fail to achieve higher levels of education, employment and independence because of (a) problems planning and organizing their lives, (b) difficulty dealing with social and sensory demands of day-to-day life and (c) poor self-advocacy skills. The skills and strategies in spark\* start children on the road to developing these skills. They learn to manage and direct their bodies, thinking and emotions more reliably and appropriately. The seeds of self-advocacy as well as self-reliance and autonomy are planted from an early stage.

Development of self-regulation typically occurs over at least the first two decades of life but we have repeatedly witnessed how spark\* helps our children make significant gains. We see them move from being driven by many biological needs to increased voluntary control of their behavior, thoughts and emotions. We find them becoming less reliant on manipulating concrete objects to imagining and visualizing. We also observe less dependence on adult direction and more confidence in their own perceptions. spark\* forms a solid foundation for continuing advancement of learning and autonomy.

## **Skills & strategies in the context of spark\***

The spark\* journey in promoting development of self-regulation begins with Behavioral Self-regulation of simple hand movements, a type of action that's readily established and practiced. Self-regulation of these actions is carefully and slowly advanced by systematically altering movement variations and reducing adult involvement and modeling. Once all of the Behavioral Self-regulation skills are established and extended into everyday life, they serve as a base for developing Cognitive Self-regulation. Improved behavioral and cognitive self-regulation also

figure importantly in the child's development of emotional self-regulation. With the child able to consciously control his body and take in clear and complete information, he's ready to improve his ability to systematically review events going on around him and determine the most relevant information. He's then in a better position to detect and interpret social clues and respond to them calmly and appropriately.

## **Continuity in areas of skill development**

The progression within each area of focus is repeated throughout **spark\***. First, the lesson focuses on the child's **Awareness of ability**. We introduce and then practice carefully-planned activities to make sure that he knows what we're asking and can do it on his own. The more important feature of this step is **self-awareness**. During this process, finds that he is able to move, think, see, hear and feel and he can control how he does these things. He also learns that he can control how those things impact him and that he can manage them.

Second, the child is helped to learn when and where he can use his self-regulation skills and strategies – **Awareness of Need**. This stage induces more self-awareness as well as **self-reflection and flexibility**. He becomes aware of situational differences and is helped to think about or reflect on what they mean. As you likely noted in the lessons, the child was asked over and over "How did do?" which is intended to prompt him to self-monitor and reflect on what he did.

**Resilience** is the next process that each child is helped to learn. In playful ways he becomes aware that he can cope in different situations with disruptions and temptations. He finds that he can be more flexible and can cope with uncertainty. This is a part of real life that all of us have to develop, including children on the autism spectrum. It may initially be quite fragile in our children but it will improve over time.

**Self-advocacy** helps the child learn that he can fend for himself in day-to-day life. We cannot be totally responsible for the child's ability to cope. At some point, he needs to take more responsibility for himself and that's what self-advocacy is about.

## **Continuity in areas of focus**

Areas of focus for **spark\*** were specifically selected to ensure that the skills and strategies can be used in a wide range of situations. This means that the same skills and strategies are more readily extended and transferred from unit to unit in **spark\*** and from setting to setting. Figure 16 on the next page shows the continuity of major skills and strategies introduced and extended over the **spark\*** lessons and units.

**Control of the child's body** presented in the Behavioral Self-regulation unit provides a more stable base for refining his attention and developing conscious control of his executive functions. As these develop, he can move on to such skills as determining the most important and relevant information in a task or situation – a skill that has both cognitive and social implications.

**Turtle Breathing**, introduced in the Behavioral Self-regulation unit, is revisited again and again as we focus on Cognitive and then Emotional Self-regulation. Turtle Breathing becomes an important mechanism in everyday life for the child to calm and center himself.

**Imitation skills** are important to learning self-regulation. The child learns to become less dependent on adults to tell him or show him what to do. He begins to look to peers and not be frozen in his tracks if an adult isn't directing him.

**Figure 1.**  
Example of continuity of skills and strategies across spark\* units and their implications.

Area of focus	Behavioral Self-regulation	Cognitive Self-regulation	Emotional Self-regulation	Implications
Control of body				<ul style="list-style-type: none"> <li>• More stable base for learning &amp; developing conscious control of executive functions</li> <li>• More consistent sustained attention</li> </ul>
Turtle Breathing				<ul style="list-style-type: none"> <li>• Strategy for self-calming &amp; centering</li> <li>• Develop sense of 'calm' &amp; reduced anxiety</li> <li>• More stable base for learning</li> <li>• Improved focused attention</li> </ul>
Imitation of others				<ul style="list-style-type: none"> <li>• Reduced dependence on adults for direction</li> <li>• Increased focus on peers as models</li> </ul>
Construction of meaning & comprehension monitoring				<ul style="list-style-type: none"> <li>• improved accuracy in detecting &amp; interpreting social clues</li> <li>• better understanding during conversations</li> <li>• increased ability to learn in group settings</li> </ul>
Use of models, signals and clues				<ul style="list-style-type: none"> <li>• increased awareness of objects &amp; people</li> <li>• improved detection &amp; interpretation of social clues</li> <li>• increased use of others as a model for social expectations</li> </ul>

During the Cognitive and Emotional Self-regulation units, the child is helped to look for and use **models, signals and clues** to guide his responses. He becomes increasingly aware that others are a resource for determining and evaluating his own behavior and performance.

**Construction of meaning and comprehension monitoring** are further examples of skills presented in spark\* that have long-term implications to the child's ability to cope and learn in daily settings. His increased ability to build on and check the meaning of information he hears and sees significantly improves his ability to learn in natural settings and to enjoy social interactions. He can more readily interpret social clues and follow and contribute to conversations. Learning in group settings, where children with ASC are often quite 'lost', will also be enhanced by these skills and strategies.

## spark\* in a research context

A number of therapists who use spark\* have provided feedback to us. They reported that, after several months of using spark\* with children, considerable amounts of generalization of skills and strategies reported by families and others involved with the children. Other major trends include:

- **Increased copying of other people**, looking to others as models.
- **More participation in group activities**, following other people's lead.
- **Playing more with other children**, even sharing preferred toys.
- **Increased eye contact** and watching other person when talking, asking questions and making comments.
- **Better understanding and use of natural gestures** to supplement communication.

These changes encompass using models, attending to other people and events, eye contact and use of gestures. The curious and fascinating thing is that these children had only worked on the Behavioral Self-regulation unit. None of the trends observed were focused on within that unit. Another interesting observation made by a speech-language was a large increase in mean length of utterance, the measure used to describe both length and complexity of sentence use. She found this with a number of the children and, as yet, is not easily explainable on the basis of self-regulation (she had not yet worked on the Expression of Knowledge section of the Cognitive Self-regulation unit). It seems that the work on executive functions, specifically attention, planning and organization and working memory, is at the center of all of the changes noted in both social and communication skills.

spark\* has also been the subject of research studies<sup>ii,iii</sup>. These studies included groups of six to eight children with autism, between seven to 12 years of age, who participated in spark\*. As an intervention program, spark\* was found to be acceptable to the children and their families; that is, no one dropped out of the study. The findings from three measures indicate statistically significant changes in the following areas after just ten sessions with spark\*:

- **Behavioral Self-regulation** (as measured on the *Behavior Rating Inventory of Executive Function*) – the children showed increased ability to maintain control of their behavior and emotional responses. This included appropriately inhibiting thoughts and actions and being more flexible in the way they approached situations.
- **Behavioral rigidity** (as measured on the *Autism Spectrum Rating Scale*) – the children showed greater tolerance for change to their routines and activities in everyday situations.

- **Affect recognition** (as measured on the *NEPSY-II*) – the children showed increased ability to recognize different emotional expressions, like happy, sad, anger, etc., as depicted in photos of people's faces.
- **Inhibition** (as measured on the *NEPSY-II*) – the children were able to control automatic responses and switch more readily between different ways of responding.

This last area was an interesting phenomenon since the Emotional Self-regulation unit was not even started with these children. It's likely that work on self-regulation with specific emphasis on executive functions impacts a larger realm – this is the hope when focusing on executive functions. When a child is helped to focus his attention, increase his inhibitory control and improve his planning and organization and working memory, his ability to discern important information in the world around him develops.

There were some interesting trends found in the data from the *Autism Spectrum Rating Scale*. They did not reach statistical significance but were strong positive indicators. The trends included improved peer socialization (for example, playing more with others, developing and maintaining relationships with other children), less unusual behavior (for example, insisting on doing things the same ways, over-reacting to sensory input) and decreased stereotypy (for example, focusing on one subject, lining up objects).

These trends support some of the anecdotal information from therapists as well as the other research data. It appears that, when children participate in *spark\**, they show improvement not only in executive functions but also in broader social and linguistic realms. This supports the contention that executive functions and self-regulation are foundation skills to other major areas of development.

## **Self-regulation in the everyday context**

Self-regulated behavior is subtle: when it occurs, you often don't notice. An example of a typical scenario will illustrate this point. Recently, I was promoting the notion of 'ignoring' with some preschoolers. The flip-side and unstated alternative was "You don't have to clobber X, you can just ignore him." I noticed that the boy's younger sister was dolloping play foam onto his head. I watched carefully, ready to intercede as need be. The little boy continued with his play and didn't even look at his little sister. She soon moved on to another activity. I commented, "Ben, you really did a good job there with your sister when she was trying to bug you." He replied calmly, "I was ignoring her." That's self-regulation. You have to notice what is missing – Ben didn't yell or hit his sister.

When children start to exercise self-regulation, you may find yourself feeling a sense of relief. You may experience more peace and quiet. You may begin to 'put down your guard' and feel you don't have to be so hyper-alert. You may reach the end of your day and wonder, "Why aren't I exhausted?" Ask yourself: "What was so much better today than yesterday?" Review with your child all the times during the day when both you and he exercised self-regulation. Celebrate the successes.

Stay alert to the child's use of self-regulation so you can highlight it and increase the likelihood that it will happen again. Some behaviors to watch for are included in Table 5 on the next page. The behaviors in the first column show that the child has an awareness of the usefulness and

application of self-regulation. The second column describes examples of resilient behavior and positive attempts to cope. The third column provides instances of self-advocating by the child to maintain his position and equilibrium.

When you notice the child using self-regulation skills and strategies, highlight them. Praise him and let him know how he helped himself use his good thinking.

### Support the child's growing autonomy

Every child wants autonomy to some degree. He wants to have a sense of choice and freedom<sup>iv</sup>. With the development of autonomy, he develops more self-determination and perseverance, along with a greater sense of achievement<sup>v</sup>. But, why would we give autonomy to a young child? Isn't it just like being overly-indulgent? No, autonomy in the spark\* model refers to the child's developing a sense of his own effectiveness as a learner and moving from being regulated by other people to becoming self-regulated. It doesn't mean that the child is free to do whatever he wants. The child has to behave according to cultural and societal values and standards, just like everyone else, but he can control the rudder on his own ship and learn to navigate on his own. He develops a sense of personal causation but, with it, we want to make sure he learns a sense of personal responsibility.

**Table 1.**  
Examples of self-regulated behavior showing awareness, resilience and self-advocacy.

Behaviors that suggest self-regulation		
Awareness of self-regulation	Resilience in using skills & strategies	Self-advocacy in helping himself self-regulate
<ul style="list-style-type: none"> <li>• Initiating activities on his own</li> <li>• Planning his own tasks, activities and goals</li> <li>• Self-monitoring his progress on tasks</li> <li>• Making reasoned choices and decisions</li> <li>• Cooperating with siblings and peers</li> <li>• Learning from what other people are doing</li> <li>• Attributing his achievements and failures to factors he can control such as effort</li> </ul>	<ul style="list-style-type: none"> <li>• Controlling his attention</li> <li>• Resisting distractions</li> <li>• Persisting in the face of difficulties, distractions or disruptions</li> <li>• Enjoying solving problems</li> <li>• Remaining calm when dealing with change, challenges and disappointments</li> <li>• Bouncing back more readily after disappointments</li> </ul>	<ul style="list-style-type: none"> <li>• Trying new tasks with few hesitations</li> <li>• Finding things he needs to accomplish something without adult help</li> <li>• Sharing and taking turns independently</li> <li>• Asking for help when needed</li> <li>• Negotiating when and how to do things</li> </ul>

To support each child's growing autonomy, give him choices<sup>vi</sup> about what to do, how and/or when or by giving a reason when choice is limited. Choice is a powerful validation of the

importance of the child's input. It can be very simple: you decide which tasks but the child determines the order for completing them or you offer milk and juice and the child selects one.

Adult involvement needs to be carefully balanced. You always focus on long-term goals for that child and keep your expectations high. At the same time, give him sincerity, warmth and respect<sup>vii</sup>.

To exercise self-regulation, we need to ensure the child CAN. That is, he's Calm, Alert and Nourished. If he's tired, not feeling well or hungry, don't press for self-regulated behavior from him.

The emotional climate used around the child is also very important to his learning. When you interact with him, be calm, positive, optimistic and confident. Take a few Turtle Breaths before interacting with the child; it'll make a significant difference in how he responds to you.

To encourage family involvement, **spark\*** includes a series of 18 newsletters to help parents understand the areas of focus and how they can promote the development of self-regulation at home and in the community. In order to make content and activities relevant to each family, parents are asked to provide information on key areas of concern and need for self-regulation in their child.

Words we use shape and are reflective of our relationship with the child. Listen to yourself talk to him. What is he learning about learning? Is learning joyful and enjoyable to him? Is it joyful and enjoyable for you? Your words should act to help the child be more motivated and to learn more about himself. Everything you say must be sincere and honest but make sure you tell him about what he does well. We can all flourish with a little encouragement and the knowledge that others believe in our abilities. The Language of **spark\*** lets the child know that you're there to support him but he needs to do as much as possible on his own and, next time, you'll ask a little more.

Self-regulation can be taught even to very young children. Some of the things that parents and teachers do naturally can enhance self-regulation skills. For example, action songs and rhymes are excellent media for practicing control of actions and thinking. Storybooks can provide 'safe' settings for experiencing a variety of emotions. As shown in **spark\***, expensive equipment and specially-designed computer games are not necessary to foster the improvements in self-regulation skills.

Some ways to foster self-regulation skills everyday include:

1. **Give the child choices:** Invite the child to express his opinion about what he would like to do or how he would like to do it. Offer him alternatives and respect his choices. This gives him a greater sense of autonomy as well as validation of the importance of his input.
2. **Value his opinion:** Listen to the child's ideas and be responsive to his suggestions. Acknowledge his outlook even if you disagree. Explain your ideas and opinions in simple and honest terms.
3. **Explain your reasoning:** Calmly and matter-of-factly, give him reasons for doing things in certain ways or at certain times. Don't feel 'mean' if you have to remind him of a

- rule; state it as an objective fact. By doing this, he'll be more willing and able to adopt the behavior.
4. **Use inclusive language:** Use of “we” and the notion of sharing thoughts, ideas and strategies can boost a child's sense that self-regulation is important for everyone. He'll have a greater sense of intrinsic motivation and won't feel singled out.
  5. **Praise and give feedback.** Praise the child for using self-regulation and explain why it's important. Don't feel that you have to give him a reward although it can help to get things going. Remember, tangible rewards can actually undermine his generalization of knowledge and learning<sup>viii</sup>. Our goal is to help the child to use self-regulation skills for their own sake and not to get a prize.
  6. **Give hints and encouragement:** By giving the child with hints and encouragement, you prompt him to think for himself and figure out what might work. When you tell him what to do, he doesn't have an opportunity to reflect and use his problem solving skills. After teaching the child a skill or strategy, begin asking him “What do you need to do?” or “What could you do to help yourself?” This reinforces his learning, extension and generalization of skills and strategies as well as his sense of autonomy.

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