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What is Executive Functioning?

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What is executive functioning?

A new evidence base has recognized that skills involved in executive functioning and self-regulation are essential not only for school achievement, but also for avoiding a wide range of population health problems.

Executive function (EF) skills help us plan, focus attention, switch gears, and juggle multiple tasks—much like an air traffic control system at a busy airport. These skills allow us to plan and prioritize tasks, manage impulses and emotions, and filter distractions. EF skills help children to calm down when excited, to maintain friendships through disagreements, and to work through problems, even when they are challenging. Children aren't born with these skills, but they are born with the potential to develop them, and the skills can be taught and strengthened over time.

These skills rely on three types of brain function: working memory, mental flexibility, and self-control. The areas of the brain involved in these functions continue to develop and mature throughout adolescence and well into our early 30s. This window provides pediatric healthcare providers with an opportunity to help children develop a skill set throughout their time in the pediatric medical home.

Why are executive function skills important?

When children have had opportunities to develop executive function and self-regulation skills successfully, both individuals and society experience lifelong benefits.



GOOD HEALTH

Executive function skills help people make more positive choices about nutrition and exercise; to resist pressure to take risks, try drugs, or have unprotected sex; and to be more conscious of safety for ourselves and for children. Skill development in executive functioning primes our biological systems and coping skills to respond well to stress. For society, the outcome is a healthier population, a more productive workforce, and reduced health care costs.

2

POSITIVE BEHAVIORS

Executive functioning helps children develop skills of teamwork, leadership, decision-making, working toward goals, critical thinking, adaptability, and being aware of our own emotions as well as those of others. For society, the outcome is more stable communities, reductions in crime, and greater social cohesion.

3

SCHOOL ACHIEVEMENT

In school environments in the United States, executive function skills help children remember and follow multi-step instructions, avoid distractions, control rash responses, adjust when rules change, persist at problem solving, and manage long-term assignments. For society, the outcome is a better-educated population capable of meeting the challenges of the 21st century.

4

SUCCESSFUL WORK

Executive function skills increase our potential for economic success because we are better organized, able to solve problems that require planning, and prepared to adjust to changing circumstances. For society, the outcome is greater prosperity due to an innovative, competent, and flexible workforce.

How can we promote the development of EF skills in pediatric practice?

Much like encouraging reading, healthy nutrition, and good sleep hygiene at well child visits helps encourage these habits at home, talking with caregivers about bringing experiences that build executive functioning into their daily lives promotes the strengthening of these skills.

For children who struggle with behavior at home and at school, part of a comprehensive approach can include activity suggestions that practice skills of self-regulation and executive functioning, which when strengthened, can help to regulate impulse control and sustain attention.

Providing these suggestions proactively, before behavioral and learning problems emerge, supports healthy development. Continuing to offer suggestions throughout adolescence supports our patients during that critical time of development.

Encouraging caregivers to talk about this type of skill-building with their child's teacher or daycare provider, even among our youngest learners, helps to carry skill practice into multiple areas of a child's life.

Specific strategies:

1

THE WELL CHILD VISIT

In the well child visit, providers can ask about what types of activities caregivers enjoy doing with children in their care. Because the development of EF and self-regulation (SR) skills starts early, it is appropriate to consider these conversations beginning as early as the 2-month visit. Celebrate what families are already doing to promote EF and SR and help make the connection between how activities they are already doing are helping to build a strong brain foundation. Empower caregivers to be the leaders in determining and directing what activities and strategies work for them.

2

SEEK CONNECTION

Think of ways that your practice can help foster social connection among adults so that caregivers can learn from and support each other. Could you connect new mothers with similar age infants, or families whose younger children or adolescents have similar types of learning challenges?

3

ROUTINES ARE KEY

Provide resources and guidelines for how to establish routines at home that nurture and support children throughout their daily activities. Children thrive on the predictability of mostly the same things happening mostly around the same time every day. Lack of predictable and stable daily routines at home can make it hard for children to develop executive function skills.

When adult caregivers and their children work together to plan and execute consistent routines, they build executive function skills and enhance adult-child interactions. Consistent routines allow children to know what comes next, plan, act, reflect on their behavior and compare it to their plans, and resist temptations and distractions. As a result, they help children feel more secure in an otherwise unpredictable and uncertain environment. In addition, regular household routines can decrease caregiver stress.

Reassure caregivers that it is never too early to start providing the reassurance of routines. Talking about routines beginning in infancy and providing information is a great start.

4

INCORPORATE PHYSICAL EXERCISE

Provide specific strategies for incorporating vigorous physical exercise into daily activities, which has been shown to positively affect stress levels, social skills, and brain development.

5

GAMES & ACTIVITIES

Provide specific examples of games and activities that help to build executive function and self-regulation skills and help brainstorm ways that families can engage in open-ended, creative play supported by adults.

[Well Visit Handout: Activities for Building EF and SR Skills, by Age Group](#)

Providers can suggest that caregivers post the ideas in a location they see often, like the refrigerator, and consider choosing one fun activity to do together every day. Caregivers can also share the list with a child's daycare provider or preschool, elementary, middle, or high school teacher to encourage practice in all areas of a child's life. Reassure caregivers that picking even one activity a day, built into small, everyday moments, can help to build a child's brain and provide a foundation for future life skills. At follow-up visits, ask if they found any favorite new activities to do together.