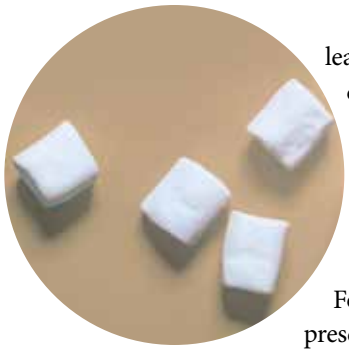
Brain Management as a Developmental Path

ISTOCK/ YARUTA

Marshmallows and the Developing Mind

FOR THE KIDS, let's start with marshmallows. Why marshmallows? Because it turns out that the basic cognitive skill of putting off a short-term reward (one marshmallow) for a long-term gain (two marshmallows) correlates with success across a lifetime. It reflects one step on a developmental self-management path called executive function (EF). Understanding the impact of EF in everyday life simplifies almost everything about raising children.



In 1972, Walter Mischel, PhD, then at Stanford University, published an influential and widely discussed study on delayed gratification in young children, which relates to early EF. Preschoolers were brought one at a time into a nearly empty room with a researcher. The adult almost immediately received a phone call and said she must leave for a moment. On a table within reach of the child was a marshmallow. Before leaving, the adult set the child up for a challenge, saying, "You can have the treat now, but if you wait until I come back in a few minutes. . . then you can have two."

As you might expect, with the adult away, the children wrestled with themselves. They sat on their hands, covered their eyes, and scrambled to fight temptation. One group, the high delayers, managed their desires successfully—they struggled but ultimately earned a second treat. Another group, the low delayers, barely made it at all—*Marshmallow. . . got to have it now.*

Amazingly enough, Dr. Mischel and his colleagues were able to follow these children through high school and into adulthood. Unsurprisingly, perhaps, the low delayers had more behavioral problems in preschool than the high delayers. Interesting, but there's more. Followed into school age, this single preschool measure of self-management correlated with academic success. The high delayers did better again. Into adulthood, it even correlated with an ability to maintain a healthy weight—the low delayers tended to have more difficulty with weight as adults.

Of course, no one study defines much of anything on its own, but other researchers have added even more evidence that preschoolers with stronger self-management skills do better academically—all the way through their education. Attention is another aspect of executive function that has been studied. One publication showed that a child's ability to focus in preschool made it more likely she would graduate college on time. The pattern is clear: Early self-management skills significantly predict future success.

CONSIDER THIS

What you really want, and need, is an honest, objective understanding of child development for yourself, through which you will discover the choices that best fit your family. Kids have been raised countless ways by countless adults and overcome countless circumstances through countless generations. Step back periodically and see if you can separate the pressures created by the world around you from your own beliefs about what your child needs to thrive.

Clearly, not every child who struggles with marshmallows will struggle in life. Some children may have their own, quite mature reasons, for being content with a single marshmallow. But these studies are quite significant—well, food for thought. They demonstrate that the bedrock of raising happy and resilient children rests on the developmental path of executive function.

EF refers to our mental capacity to manage just about everything in life, like the conductor of an orchestra, setting the path, keeping track of details, and running the show. A business requires *both* talented employees *and* someone to organize and coordinate the big picture. In the same way, all people require not only specific skills to handle routines, academics, social situations, and the rest of life, but also the ability to manage and hold it all together, to juggle tasks, and to overcome obstacles. EF involves skills like decision-making, self-monitoring, and planning. And this all begins to take root in childhood along a developmental path related to EF.

Executive function isn't yet a part of everyday language—*How's your son's EF maturing*? But it will be as parents better understand the role it plays in childhood. And here's the most reassuring point: Despite its wonky, overly scientific name, there is nothing complicated about building executive function. It's more straightforward and less anxiety provoking than much of what we're led to believe nowadays about raising kids.

When you start seeing parenting through the developmental lens of EF, you discover proven ways children learn, overcome adversity, get along with others, and become independent. It allows you to let go of so much of what is unnecessary, out of your control, and causes unwarranted fear. As a foundation, children require stable homes, clear limits, a time to play. . . and, for many, not much more than that! That's because, as you'll see, supporting EF, guiding children toward the ability to defer gratification, and more, not only makes their lives easier—it makes parents' lives simpler too.

Managing Your Child's Brain—Until They Can Manage It Themselves

EXECUTIVE FUNCTION resides primarily in the front part of the brain. It drives learning, monitors our thinking and behavior, identifies mistakes, and defines a host of other self-regulatory tasks essential to everyday life. In essence, its job is to integrate what we encounter in life with what we know and then decide how to respond. Like a good manager, it synchronizes our inner and outer experience and keeps us on track toward our goals. Before EF matures, a child understandably relies on their parents to provide guidance, problem-solve, and supervise behavior—acting as the brain manager while helping a child build their own independent skills.

Beyond what we know and have learned, and even beyond motivation, all of us require mental tools that let us plan and adapt to the challenges we face. Those cognitive abilities—the capacity to oversee our own behavior, anticipate the future, problem-solve, and coordinate just about anything that requires coordination—are all part of EF. Resilience and independence largely rely on this concrete skill set.

Executive function explains the link between so many topics on the minds of anyone working with children today. Terms like *mindfulness, resilience, grit, mindset,* and even *attention-deficit/hyperactivity disorder* all converge around the development of EF. EF-based parenting guides everything from common-sense behavioral management (young children learn almost exclusively from immediate feedback and not through discussion) to supporting teenagers as they mature into adults (EF, and therefore all of judgment and planning, mature only after teens become grown-ups).

Since the Stanford Marshmallow Experiment, discussed earlier, early childhood EF has been further linked to the well-being of adolescents and adults. One study even connected preschool executive function to adult measures of health, wealth, and the likelihood of getting into trouble with the law. A strong brain manager guides performance not only in school but in recreational activities, personal relationships, and navigating emotions. Thus, supporting self-management goes a long way to setting our children up for success.

Until recently, many scientists believed that "development" ended in childhood. EF itself was a mysterious set of skills that popped up at some point and then stayed

CONSIDER THIS

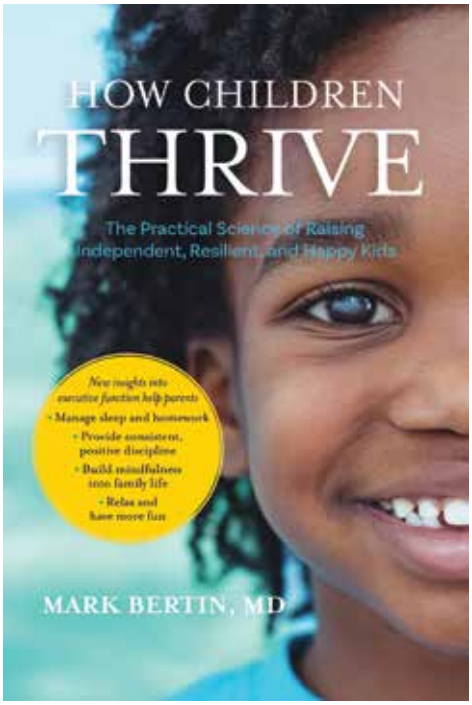
The intention here is to offer another framework that will help you let go of whatever has been making life unnecessarily complicated when it comes to parenting. Many things we have learned in life support wise choices. . . but not all. Much of what we believe may be because of how we were raised, what we hear from friends, or what we read on the Internet, where stories presented as fact are increasingly not based in reality at all. One useful practice is this: For any belief you have about yourself, your child, or the world, pause and ask yourself, Is it true? Consider what you are doing with your family out of habit that you might choose to change, while holding on to what is really valid and useful.

stable through life. Now we know that the skills required to manage life progress from infancy until almost age *thirty*. Normal human development continues far later than ever imagined.

Medical advances have turned other old-fashioned views of the brain on their collective ear. Whereas we used to think the brain barely changed over time, it turns out the brain responds to experience, like a muscle. On a neurological level, it adapts throughout our lives, a concept called neuroplasticity. Anything we do repetitively hardwires itself, from good habits to less useful ones. This includes either cultivating or undermining attention as well as cultivating or undermining EF.

Therefore, we now know: (1) EF is a developmental path that progresses through adulthood, and (2) the brain reorganizes itself throughout our lives (neuroplasticity). Let's tie those two ideas together, which will clarify both why EF is influenced by parenting and why it influences parenting.

Your child's brain develops for thirty years, and how you parent and the life your child lives affects brain development. This may sound stressful, but it needn't be. That's because *what affects EF trends away from pressured overscheduled children toward balanced, more successful ones,* allowing both you and your child to breathe easier. Your awareness of EF facilitates your decision-making around family scheduling, discipline, and much more. Becoming *aware* of EF, shifting perspective in this way alone and focusing on what works, is a powerful way to invite more calm into your family routine.



Adapted from *How Children Thrive: The Practical Science of Raising Independent, Resilient, and Happy Kids* by Mark Bertin, MD. Copyright ©2018 by Mark Bertin. Published in May 2018 by Sounds True.

As an example, let's return now to the idea of EF and behavior, particularly discipline. A toddler cannot relate a delayed punishment to a current misbehavior; their brain is not yet wired to do that. This means there's no need for you to stress if they cannot reflect on the *why* of a behavior or do not change their choices much when you talk with them about why not to act out. In a toddler, a behavior happens, and whatever happens next (praise versus a time-out, for example) encourages more or less of it—that's all. This is EF awareness in action.

What about teens? EF explains why they need their parents almost as much as younger children. They crave independence, but with immature EF they often fail to consider long-sighted consequences of their actions—*Let's drag race, there's hardly ever any traffic on this road.* They don't have a brain manager fully on the job yet to moderate their emotions while also considering any larger implications.

Seeing the reality of teen EF doesn't mean we need to coddle or overprotect. Instead, we stay aware of our children's actual abilities while steadily offering more freedom and responsibility only as they show themselves ready. We let go of guilt and keep our children safe by respecting both their desire for independence and the relative immaturity of their growing brains.

Like any aspect of cognitive development, an undefinable amount of EF is genetically programmed and therefore outside our control—one of the fundamental stresses of parenthood. Yet much is influenced by upbringing and environment, and that's where our most effective efforts lie. For example, one of the most significant decisions in our busy tech-driven lives is protecting free play, the kind that flows from the imagination of children. Open-ended play itself evolved largely to support the growth of EF, and it doesn't require a lot of planning. In this way and others, EF-based parenting does not add anything more to most family schedules, it eases life in the long run.

What are the actual skills that go into EF? Language, walking, and running develop at their own pace, and so does the ability to manage life. It's useful to see how these abilities unfold. For starters, EF is often broken down into these three attributes:

- **Cognitive flexibility** *(The last fourteen times we had this discussion, we fought terribly. Maybe I should take a different approach.)*
- **Inhibition** *(I'd like to bop you in the nose for taking my toy, but I'll talk to the teacher instead.)*
- **Working memory** *(My mom said to go upstairs, get dressed, and come back down again. Oh, wait, what was that first thing again?)*

A more practical framework defines EF as related to six skill sets:

- **Attention management:** the ability to sustain focus when challenged, shift attention, and avoid hyperfocusing (becoming too absorbed) when engaged in an enjoyable task
- **Action management:** the ability to control behavior, self-monitor, and learn from mistakes
- **Task management:** the ability to organize, plan, prioritize, and manage time
- **Information management:** the ability to remember, organize, and retrieve information
- **Emotional management:** the ability to experience emotions without impulsively acting on them
- **Effort management:** the ability to persevere when activities are challenging, sustain focus, and work efficiently

When stresses arise, across each of these skill sets you can ask: What does it mean for my bright, sweet-natured six-year-old child that she is twenty years away from mature EF?

To paraphrase an old saying, we cannot cover the road ahead for our children with leather, but we can equip them with a solid pair of hiking shoes. Instead of impossibly aiming to control and predict everything, we aim for our children to be capable of managing life themselves.

At age six, your child is not fully able to focus, think of the future, or make a plan. Nor is she able to manage emotions or sustain effort when things get tough as much as she will one day. From that perspective, we can identify specific skills that require our support each step along the way.

To paraphrase an old saying, we cannot cover the road ahead for our children with leather, but we can equip them with a solid pair of hiking shoes. Instead of impossibly aiming to control and predict everything, we aim for our children to be capable of managing life themselves. Seeing EF pragmatically lays out the details of successful discipline, the capacity for independence, and what goes into managing the average classroom. At its heart, executive function encompasses our capacity to overcome the unavoidable stresses of daily life. As much as anything else we offer, taking time to support a child's emerging EF skills allows not only them but also entire families to thrive.

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