An Inside-Out Guide to the Emerging Adolescent Mind, Ages 12-24

Brainstorm

The Power and Purpose of the Teenage Brain

Daniel J. Siegel, M.D.

bestselling author of The Whole-Brain Child and Parenting from the Inside Out
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PART I

The Essence of Adolescence

Adolescence is as much a perplexing time of life as it is an amazing one. Running roughly between the ages of twelve and twenty-four (yes, into our mid-twenties!), adolescence is known across cultures as a time of great challenge for both adolescents and the adults who support them. Because it can be so challenging for everyone involved, I hope to offer support to both sides of the generational divide. If you are an adolescent reading this book, it is my hope that it will help you make your way through the at times painful, at other times thrilling personal journey that is adolescence. If you are the parent of an adolescent, or a teacher, a counselor, an athletic coach, or a mentor who works with adolescents, my hope is that these explora-
tions will help you help the adolescent in your life not just survive but thrive through this incredibly formative time.

Let me say from the very start that there are a lot of myths surrounding adolescence that science now clearly shows us are simply not true. And even worse than being wrong, these false beliefs can actually make life more difficult for adolescents and adults alike. So let’s bust these myths right now.

One of the most powerful myths surrounding adolescence is that raging hormones cause teenagers to “go mad” or “lose their minds.” That’s simply false. Hormones do increase during this period, but it is not the hormones that determine what goes on in adolescence. We now know that what adolescents experience is primarily the result of changes in the development of the brain. Knowing about these changes can help life flow more smoothly for you as an adolescent or for you as an adult with adolescents in your world.

Another myth is that adolescence is simply a time of immaturity and teens just need to “grow up.” With such a restricted view of the situation, it’s no surprise that adolescence is seen as something that everyone just needs to endure, to somehow survive and leave behind with as few battle scars as possible. Yes, being an adolescent can be confusing and terrifying as so many things are new and often intense. And for adults, what adolescents do may seem confounding and even senseless. Believe me, as the father of two adolescents, I know. The view that adolescence is something we all just need to endure is very limiting. To the contrary, adolescents don’t just need to survive adolescence; they can thrive because of this important period of their lives. What do I mean by this? A central idea that we’ll discuss is that, in very key ways, the “work” of adolescence—the testing of boundaries, the passion to explore what is unknown and exciting—can lay the stage for the development of core character traits that will enable adolescents to go on to lead great lives of adventure and purpose.
A third myth is that growing up during adolescence is all about moving from dependence on adults to independence from them. While there is a natural and necessary pushing away from the adults who raised us, adolescents still benefit from relationships with adults. The healthy move to adulthood is toward interdependence, not complete “do-it-yourself” independence. The nature of the bonds that
adolescents have with their parents as attachment figures changes, and friends become more important during this period. Ultimately, we learn to move from needing others’ care during childhood, to pushing away from our parents and other adults and learning to lean more on our peers during adolescence, to then learning to both give care and receive help from others. That’s interdependence. In this book we’ll explore the nature of these attachments and how our need for close relationships in our lives continues throughout the life span.

When we get beyond the myths, we are able to see the real truths they mask, and life for adolescents, and the adults in their lives, gets a whole lot better.

Unfortunately, what others believe about us can shape how we see ourselves and how we behave. This is especially true when it comes to teens and how they “receive” commonly held negative attitudes that many adults project (whether directly or indirectly)—that teens are “out of control,” or “lazy” or “unfocused.” Studies show that when teachers were told that certain students had “limited intelligence,” these students performed worse than other students whose teachers were not similarly informed. But when teachers were informed that these same students had exceptional abilities, the students showed marked improvement in their test scores. Adolescents who are absorbing negative messages about who they are and what is expected of them may sink to that level instead of realizing their true potential. As the writer Johann W. van Goethe said, “Treat people as if they were what they ought to be and you help them become what they are capable of being.” Adolescence is not a period of being “crazy” or “immature.” It is an essential time of emotional intensity, social engagement, and creativity. This is the essence of how we “ought” to be, of what we are capable of, and of what we need as individuals and as a human family.
Brainstorm is set up as follows: The first part examines the essence of adolescence and how understanding its important dimensions can create vitality now and throughout the life span. The second part explores the way the brain grows during adolescence so that we can make the most of the opportunities this period of life creates for us. The third part explores how relationships shape our sense of identity and what we can do to create stronger connections with others and with ourselves. In the fourth part, we dive into the ways in which the changes and challenges of adolescence can be best navigated by being present, by being receptive to what is happening so that we can be fully aware of the inner and interpersonal aspects of these experiences. I'll also provide practical steps along the way, in the mindsight tools sections, which offer science-proven ways to strengthen our brains and our relationships.

This book is all about understanding and nurturing the essential features of adolescence to bring the most health and happiness into the world regardless of what age we are.

The Benefits and Challenges of Adolescence

The essential features of adolescence emerge because of healthy, natural changes in the brain. Since the brain influences both our minds and our relationships, knowing about the brain can help us with our inner experience and our social connections to others. In these pages I'll show how this understanding and learning the steps to strengthen the brain in practical ways can help us build a more resilient mind and more rewarding relationships with others.
During the teen years, our minds change in the way we remember, think, reason, focus attention, make decisions, and relate to others. From around age twelve to twenty-four, there is a burst of growth and maturation taking place as never before in our lives. Understanding the nature of these changes can help us create a more positive and productive life journey.

I’m the father of two adolescents. I also work as a physician in the practice of child, adolescent, and adult psychiatry, helping kids, teens, adults, couples, and families make sense of this exciting time in life. In addition to working as a psychotherapist, I also teach about mental health. What has struck me in each of these roles is that there is no book available that reveals the view that the adolescent period of life is in reality the one with the most power for courage and creativity. Life is on fire when we hit our teens. And these changes are not something to avoid or just get through but to encourage. Brainstorm was born from the need to focus on the positive essence of this period of life for adolescents and for adults.

While the adolescent years may be challenging, the changes in the brain that help support the unique emergence of the adolescent mind can create qualities in us that help not only during our adolescent years, if used wisely, but also as we enter adulthood and live fully as an adult. How we navigate the adolescent years has a direct impact on how we’ll live the rest of our lives. Those creative qualities also can help our larger world, offering new insights and innovations that naturally emerge from the push back against the status quo and the energy of the teen years.

For every new way of thinking and feeling and behaving with its positive potential, there is also a possible downside. Yet there is a way to learn how to make the most of the important positive qualities of the teenage mind during adolescence and to use those qualities well in the adult years that come later.
Brain changes during the early teen years set up four qualities of our minds during adolescence: novelty seeking, social engagement, increased emotional intensity, and creative exploration. There are changes in the fundamental circuits of the brain that make the adolescent period different from childhood. These changes affect how teens seek rewards in trying new things, connect with their peers in different ways, feel more intense emotions, and push back on the existing ways of doing things to create new ways of being in the world. Each of these changes is necessary to create the important shifts that happen in our thinking, feeling, interacting, and decision making during our adolescence. Yes, these positive changes have negative possibilities, too. Let’s see how each of these four features of the adolescent brain’s growth has both upsides and downsides, and how they fill our lives with both benefits and risks.

1. **Novelty seeking** emerges from an increased drive for rewards in the circuits of the adolescent brain that create the inner motivation to try something new and feel life more fully, creating more engagement in life. **Downside:** Sensation seeking and risk taking that overemphasize the thrill and downplay the risk resulting in dangerous behaviors and injury. Impulsivity can make an idea turn into an action without pausing to reflect on the consequences. **Upside:** Being open to change and living passionately emerge as the exploration of novelty is honed into a fascination for life and a drive to design new ways of doing things and living with a sense of adventure.

2. **Social engagement** enhances peer connectedness and creates new friendships. **Downside:** Teens isolated from adults and surrounded only by other teens have increased-
risk behavior, and the total rejection of adults and adult knowledge and reasoning increases those risks. **Upside:** The drive for social connection leads to the creation of supportive relationships that are the research-proven best predictors of well-being, longevity, and happiness throughout the life span.

3. **Increased emotional intensity** gives an enhanced vitality to life. **Downside:** Intense emotion may rule the day, leading to impulsivity, moodiness, and extreme sometimes unhelpful reactivity. **Upside:** Life lived with emotional intensity can be filled with energy and a sense of vital drive that give an exuberance and zest for being alive on the planet.

4. **Creative exploration** with an expanded sense of consciousness. An adolescent’s new conceptual thinking and abstract reasoning allow questioning of the status quo, approaching problems with “out of the box” strategies, the creation of new ideas, and the emergence of innovation. **Downside:** Searching for the meaning of life during the teen years can lead to a crisis of identity, vulnerability to peer pressure, and a lack of direction and purpose. **Upside:** If the mind can hold on to thinking and imagining and perceiving the world in new ways within consciousness, of creatively exploring the spectrum of experiences that are possible, the sense of being in a rut that can sometimes pervade adult life can be minimized and instead an experience of the “ordinary being extraordinary” can be cultivated. Not a bad strategy for living a full life!

In a nutshell, the brain changes of adolescence offer both risk and opportunity. How we navigate the waters of adolescence—as young
individuals on the journey or as adults walking with them—can help
guide the ship that is our life into treacherous places or into exciting
adventures. The decision is ours.

Maintaining the Power and Purpose of the
Adolescent Mind into Adulthood

Too often I hear adults come to my practice and say that their life is
in a rut. They feel “stuck” or “empty,” have lost their novelty-seeking
drive and are filled with the boredom of just doing the same old
things over and over again. They also find their lives filled with a
lack of social connectedness—they feel isolated and alone. And for
many, life has lost its emotional intensity, things feel lackluster, even
boring. This ennui can lead to apathy or even depression and despair.
Nothing seems to matter; nothing seems to feel alive or vital. When
adults stop using their potential for creative exploration, the way
they reason and approach life’s problems becomes simply a repeated
familiar routine and imagination goes out the window. Life can be-
come, well, lifeless. When adults lose the creative power of the ado-
lescent mind, their lives can lose vitality and become meaningless.

The playfulness and humor that emerge from the creation of new
combinations of things are essential to keep our lives full of vitality.
Hang out with teens and you’ll often hear laughter and hysterics.
And sometimes you’ll hear a lot of crying. So emotional intensity
can bring joy, and it can bring tears, for sure. Hang out with many
adults, and you’ll often hear predominantly serious talk. Yes, life is
serious. But we can bring joy and humor to these lives we lead. We
need to live with humor and zest, not in spite of the world’s problems
but because of them.

Yet when adults lose the four distinguishing features of adoles-
ence, when they stop cultivating the power of novelty seeking, social engagement, emotional intensity, and creative exploration, life can become boring, isolating, dull, and routinized. Who would intentionally choose to live like that? Most likely no one. But it happens all the time. It seems we adults are prone to just cruise on automatic pilot. Why? It can be difficult coping with life’s circumstances, to face the world’s stresses. Sometimes it’s easier to just shut down these essential aspects of a vital life that come during adolescence and instead try and stay in “survival mode” as we develop a routine we can rely on to function. Allowing ourselves to lose our vitality will only make life harder—and it also can lead to not keeping the brain as strong as it could be as we age.

So I’m suggesting that what adolescents have going for them that is both a challenge and a gift is actually what adults need in order to maintain vitality in their lives. Here’s another myth. People tend to assume that the brain stops growing after childhood. But that’s not true. The brain not only grows and changes during childhood and adolescence, but continues to grow throughout the life span. My proposal to you is that the four features of adolescence are exactly what we need in order to live a vital life as teens and to cultivate in order to keep our brains growing throughout our lives.

Here’s a way to remember this “essence” of the brain changes in adolescence. I love acronyms, much to my students’ either delight or dismay. So if this acronym is helpful for you, great. Here it is: The essence of the adolescent brain changes that are the essence of healthy ways of living throughout the life span spell the word essence itself:

**ES:** Emotional Spark—honoring these important internal sensations that are more intense during adolescence but serve to create meaning and vitality throughout our lives.
THE ESSENCE OF ADOLESCENCE

SE: *Social Engagement*—the important connections we have with others that support our journeys through life with meaningful, mutually rewarding relationships.

N: *Novelty*—how we seek out and create new experiences that engage us fully, stimulating our senses, emotions, thinking, and bodies in new and challenging ways.

CE: *Creative Explorations*—the conceptual thinking, abstract reasoning, and expanded consciousness that create a gateway to seeing the world through new lenses.

This is the essence of living well during adolescence and during the adult years: *Emotional Spark—Social Engagement—Novelty—Creative Explorations*. Adol-ESSENCE. Or: *Adolescence is Adult-ESSENCE.*

I wonder if some of the tension that I see in parents as a reaction toward adolescents is at times a deep longing for these very features they themselves may have lost. Not having an emotional spark can make a teen’s exuberance threatening. Not being socially engaged can make an adult feel disconnected in the face of a teen’s social life. How many new friends did we make at ages thirty, forty, or fifty? All the drive for new things in an adolescent’s life can make an adult’s daily routines seem dull. And the creative explorations that drive a teen into all sorts of new ways of thinking and behaving can make the humdrum and predictability of adult life at times seem too controlled and too limiting.

Perhaps if adults could recapture some of this vital essence the gap between the generations would lessen. What I mean by this is that sometimes what we see in others can remind us of what we are missing in ourselves, and this reminder makes us frustrated, disappointed, angry, or sad. As a therapist, I see this all too often, when, for instance, parents cannot stand some aspect of their child’s person-
ality because it reminds them of something that bugs them about their own life. If we take a deep breath and realize we are all lifelong learners, then an adult’s intense emotional reaction to a teen, for example, can serve as a reminder for us to explore our own inner lives and not simply react outwardly.

Adults have things to learn from adolescence as a period we went through and from adolescents as the ones going through that developmental period right now. Adolescents can remind us of what we have a right to experience in our lives. Similarly, as adolescents we have things to learn from adults, as adults share with us their experiences as they support our development toward independence.

Learning to use the power of the adolescent mind can help us have a positive experience as it emerges during this period of intense change. When navigated well, these brain changes can lead to positive outcomes later on. Holding on to the essential power of the
teenage mind into later adolescence and beyond, into the adult years, can enable us to continue lifelong learning and recognize the important life-affirming sense of adventure, vitality, and courage that adolescence brings. Learning to use the power of the emerging adolescent mind well is as important for us as adolescents as it is for us as adults!

Adolescence from the Inside Out

We’ll be exploring the essence of adolescence from an “inside out” approach. What this means is that we can learn to understand how our own or others’ inner workings can help us understand the outer behaviors of ourselves and of others. This inside-out understanding can help us create the life we want, not simply settle for what we are given. To take on this inside-out approach, we’ll learn about how the brain, self-awareness, and relating to others all help create the experience of who we are—how they help create our minds—so that we can be better equipped for this period of life.

We’ll also explore important and relevant scientific ideas and reveal how to apply science in helpful ways. This book is written so that it feels like a conversation between me as author and you as reader. My hope is that reading it will make you feel as if we are actually talking together, in person, about this important period of life.

I’m excited to invite you to join with me in this conversation-like exploration to put yourself in the experience, to reflect on what is going on in your own life. With two adolescents in my personal life now, one in his early twenties and the other in her late teens, I am presented every day with the opportunities and challenges of being a parent of two individuals going through this period of life. And being their father also recalls the memories and meanings of my own
adolescent years. I’ll share with you as we go along some of these inside-out reflections that are directly relevant to the topics we’ll be focusing on.

For you as an adolescent, these discussions can invite you to think about your own life now. If you are an adult reading this, you may find yourself reflecting on what is going on now or what went on in your own adolescence. Your reading experience—like my writing experience—is intended as an invitation for us to become actively involved in a conversation with each other and for you to reflect on your own experiences with me. You may find it helpful to keep a personal journal to capture your own reflections, a process that may feel good and also one that has been shown to support the ability to make sense of things. If you are looking for a journey of discovery where what you learn and what you reflect on can help you travel through the adolescent years and harness the creative power of this period and hold on to its essence with more knowledge, insight, and understanding, you’ve come to the right place.

We never stop discovering who we are or what has meaning in life. Our minds continually emerge in ways that can support a healthy, exuberant life as we grow and develop throughout our lives. So this is truly an exploration I am asking you to join me in, not some download of facts and figures, not just a bunch of opinions and mandates on what you should do. And whether you are in adolescence or adult years, this exploration can help your mind emerge in helpful ways. Since this is a conversation, it means we’ll be asking questions, basic questions, that we’ll try to wrestle with to know how to attempt to answer them. The fact is that we don’t know the final answers to a lot of questions about the brain or the mind, but asking them and searching for the answers are essential steps for us to take.

My own kids ask me why I like teaching so much, and I say it is because I am always learning when I connect with people in educa-
tional experiences. I feel it’s an important stance to take—that we are lifelong learners. To have an understanding of where another person is coming from during this developmental period helps everyone navigate it well and continue to grow.

During childhood, parents are often seen as the be-all and end-all of role models. In fact, adolescence is a time when we begin to see our parents as actual people, not heroes, who have their own flaws and limitations. Perhaps seeing parents in this way helps us leave them and go out into the world. As Mark Twain once said, “When I was a boy of fourteen, my father was so ignorant I could hardly stand to have the old man around. But when I got to be twenty-one, I was astonished at how much the old man had learned in seven years.”
Naturally, pushing away from the status quo is a fundamental way to create novel experiences. And novelty seeking is both a part of the push back and inherently rewarding. Adolescence is also a time filled with new ideas. In many ways, seeking novelty is rewarding as it fills experiences, behaviors, perceptions, thoughts, ideas, intentions, and beliefs with the spirit of adventure.

This striving for novelty is a creative power that can be harnessed for the benefit of everyone, if we see this move toward new things and independence in a positive way. On the other hand, if adults fight against these fundamental features of adolescence, it’s like fighting against the natural push of a waterfall. The force of adolescence will find some way to manifest itself in a teen’s external actions and internal mental shifts. You cannot stop a waterfall, but you can learn to direct its course and harness its power.

The good news is that the developmental state of adolescence does not have to be experienced as a war between the generations. If adults try to block the flow of adolescence, it is likely that communication, so important to relationships, will be tainted with tension and disrespect. Disconnection, secrecy, isolation, and many other negative and hurtful social responses can emerge. The key is for the adolescent and the adult—who-once-was-an-adolescent to recognize these important brain changes and learn to navigate these years constructively and collaboratively in order to keep communication open between them, to optimize life for everyone, and to avoid tragic endings of risky behaviors. The challenge is not easy, but it at least should be made clear.

This is our balancing act, for adolescents and adults alike: making the drive for reward and the passion for novelty result in positive outcomes in life.

The brain is our enabler—our control center—and the good news is that when we understand the brain, we can harness its pow-
erful drives to make positive choices and constructive changes in our lives. Understanding how the brain links its different circuits, how it becomes integrated with development, is a useful way of seeing how we can help promote optimal functioning in our lives during adolescence and beyond. This integration is altering the linkage of different areas that can help us understand and optimize the important changes in adolescence.

Here is the powerful finding from science: You can learn the steps to make your brain more integrated and to strengthen it. You can learn how to improve the way your mind functions and make your brain healthier and your relationships more rewarding. These are the basic things we’ll explore in the pages ahead. You’ll learn through stories and science about these important aspects of your life; and you’ll be offered practices to create more integration in your life. And if you learn these things, they can make the rest of your life better. No kidding.