

# The Brain in Adolescence: A Closer Look



Many of us think of 18 as the start of adulthood; however, an emerging body of research is testing this long-held belief. As a result of ongoing research that focuses on the growth and development of adolescent brains, we are beginning to understand that a young person's brain continues to develop at a significant rate well into the mid-20s and sometimes as late as 30 for males. Science is teaching us that adolescence and young adulthood are developmental periods ripe with risk and opportunity and that experiences during this time will have profound impacts on a person's life trajectory – for better or worse.

Early childhood was once considered the most critical period for brain development, but in fact, scientists are learning that adolescence and young adulthood are equally important stages. Between the ages of about 14 until 25, the human brain undergoes profound changes, especially in major centers related to regulation, motivation and relationships. As a result, the brains of adolescents and young adults are primed for risk-taking just as they begin assuming adult roles and responsibilities, which can pose a difficult transition for even the most well-supported young person.

Because of extensive changes and adaptations that occur in the wiring of the brain during this developmental period, caring adults have a critical window of opportunity to help adolescents navigate this process. Due to popular misconceptions about the ways that young people make decisions and take risks, however, that window is often missed.

Existing efforts and public policies aimed at supporting vulnerable adolescents may not be consistent with what the latest brain science teaches us about what drives young people's behavior. Many strategies focus on educating teens, or threaten punishment if the wrong choices are made; however, these approaches have not been found to profoundly affect behavior change. Researchers have identified the promise of reward as far more influential on adolescent decision-making—even when young people are fully aware of potential risks.

Studies have found that childhood trauma further complicates matters for the developing adolescent brain. Trauma has a significant impact on a young person's brain and nervous system, and leads to behavior that's driven less by choice and more by unconscious processes. When working with youth who have experienced trauma, practitioners, organizations and systems must first determine what is at the heart of destructive behaviors. A trauma-informed approach can lead to meaningful positive changes, as relationships with caring adults and peers have been found to help promote neurobiological healing in the face of trauma, poverty and other negative influences on brain development.

All adolescents face challenges as they navigate their worlds with a brain that has full cognitive capacity, yet immature ability to regulate behavior or emotion. A complex picture emerges when we combine the typical challenges of adolescence with the impact of trauma: On the one hand, a reduced ability in the parts of the brain responsible for executive functions; on the other, heightened sensitivity in areas associated with the dangerous behaviors characteristic of this developmental period.



## Spotlight on Research: Dr. Elizabeth Cauffman

The research of Dr. Elizabeth Cauffman of the University of California at Irvine provides scientific evidence that the adolescent brain is not fully mature until well after the age of 18. Dr. Cauffman, a professor of psychology and social behavior, focuses her work on young adults. One of her studies demonstrated that even though most intellectual abilities are developed by age 16, psychosocial development—which is related to the area of the brain that allows us to self-regulate, control our impulses, and see the long-term impact of our choices—is not complete until a person reaches his or her late 20s. This gap between cognitive ability and emotional maturity, Dr. Cauffman and her colleagues posit, leads to the risk-taking and short-sighted behavior that is associated with the adolescent years.

That behavior can lead to encounters with the law, and much of Dr. Cauffman's research focuses on the implications of these findings on juvenile justice policy. She is part of the team behind the landmark Pathways to Desistance project, which for more than 15 years has tracked 1,300 young people between the ages of 14 through 17 who had contact with the justice system. Although these were serious offenders, for the most part these young people did not continue to commit crimes into adulthood: about 90% were no longer offending by the age of 25. Researchers believe that this major drop-off in criminal behavior can be attributed to the brain's completed development.

This research is influencing lawmakers and policymakers around the country, who are starting to realize that adolescents differ from adults in ways that may require different treatment under the law. Indeed, Dr. Cauffman's research was cited in the 2005 Supreme Court decision to abolish the juvenile death penalty, as well as the 2012 judgment that limits life-without-parole sentences for those under 18. This new understanding of adolescent brain development has implications for all organizations that work with young people who are transitioning into adulthood.

### To Learn More:

#### [Adolescent Brain Cognitive Development Study](#)

This is the largest ever long-term study of brain development and child health in the United States, which will track 10,000 children over the course of a decade to learn about how their brains develop. Their site has a wealth of information related to brain development research. <http://abcdstudy.org/>

#### [Pathways to Desistance Study](#)

The Pathways to Desistance study is a multi-site, longitudinal study of serious adolescent offenders as they transition from adolescence into early adulthood. Dr. Elizabeth Cauffman served as co-investigator. <http://www.pathwaysstudy.pitt.edu/>

#### [The Adolescent Brain](#)

New Research and its Implications for Young People Transitioning from Foster Care. From the Jim Casey Youth Opportunities Initiative, this in-depth report discusses what those in the child welfare sector need to know about applying new findings in adolescent brain development to their work with young people in foster care. <http://www.aecf.org/resources/the-adolescent-brain-foster-care/>