Adolescence is a period of physical, mental, and emotional development, generally occurring between the ages of 12 and 18, often accompanied by distinct behavioral changes.¹

Neuroscience research shows that there are physical differences between the brains of adults and youth.

- According to recent findings, the human brain does not reach full maturity until at least the mid-20s.²
- The specific changes that follow young adulthood are not yet well studied, but it is known that they involve increased myelination and continued adding and pruning of neurons.³
- The prefrontal cortex of the brain is crucial for weighing risk vs. reward, future planning, impulse control, and is critical for a person to be able to make rational decisions.⁴ However, it is one of the last parts of the brain to develop and is still not fully mature by late adolescence.⁵
- The limbic system, which assists in processing and managing emotions, is still maturing during adolescence. As a result, adolescents are more prone to experiencing mood swings and acting in an impulsive, instinctive manner.⁶

In addition to structural differences, adolescent brains have an imbalance among these developing brain systems

- The subcortical region of the brain, responsible for novelty and emotions, will more frequently take precedent over the prefrontal cortex, responsible for self-control, in an adolescent brain.⁷
- As the National Research Council states, “In emotionally charged situations with limited time to react, as may be the case for most juvenile offenses, basic emotional circuits may drive adolescent actions. In more neutral contexts, more top-down cortical circuits may have a greater impact on decisions.”⁸

Youth, even in their late teens, do not have the same ability as adults to make mature decisions.

- Engaging in reckless actions during adolescence is socially normative behavior.⁹ However, although crimes peak around late adolescence, they begin a steep decline into adulthood.¹⁰
- It is harder for adolescents to exercise self-control than it is for adults.¹¹ In fact, it is unreasonable to expect that people younger than 18 will have a fully formed ability to resist impulses.¹²
- Adolescents and adults think differently in terms of risks and rewards when considering alternative choices. In particular, because of shifts in dopamine production, kids are more likely to place greater weight on rewards than on risks when making such a choice.¹³ This type of decision-making is likely to lead to risky behaviors.¹⁴
- Adolescents are less likely to consider the long-term consequences of the actions they choose because their capacity for thinking and planning for the future is still developing.¹⁵
Youth are more vulnerable to the negative influences of environment and peer pressure than adults are.

- Research shows that during youth and adolescence, people are more likely to engage in risky behaviors because of peer pressure.\(^6\)
- Specifically, one study showed that adolescents experienced increased stimulation in reward-related circuitry when performing a difficult task in the presence of peers.\(^7\)
- Negative characteristics of neighborhoods have a major influence on juvenile delinquency.\(^8\) Because youths have less freedom over their lives than adults, they are often unable to escape these environments.\(^9\)
- Such negative environments often include emotional and physical trauma, which can inhibit effective adolescent brain development.\(^2\)

Crime is often a characteristic of the period of adolescence itself. It does not necessarily indicate the final character of a person.

- Adolescence is a time when a person is still forming an identity, a process that will not be complete until adulthood.\(^2\)
- Because of the changes taking place during adolescence, most young offenders will not become adult offenders.\(^2\) Furthermore, there is no reliable way to tell which juveniles will be among the few that do continue their criminal behavior into adulthood.\(^2\)
- In fact, a male adolescent arrested at 16 for robbery has the same likelihood of being arrested as his peers at age 24.\(^2\)

The Supreme Court has acknowledged the fundamental differences between the brains of adults and adolescents.

- In Roper v. Simmons, the Supreme Court ruled that juveniles may not be sentenced to the death penalty, seeing it as cruel and unusual punishment for adolescents without fully developed brain systems responsible for behavior control.\(^2\)
- In 2012, with Miller v. Alabama, the Supreme Court ruled the sentencing of juveniles to mandatory life without parole unconstitutional. This judgment rested on the opinion expressed in Roper v Simmons that adolescents have a, “Lack of maturity,” and ‘Underdeveloped sense of responsibility,’ [which] lead to recklessness, impulsivity, and heedless risk-taking.” \(^2\)

To learn more, or to get involved in changing things in your state, contact:
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END NOTES:


4 Antoine Bechara et al., Characterization of the Decision-Making Deficit of Patients with Ventromedial Prefrontal Cortex Lesions, 123 Brain 2189, 2198-2200 (2000) (patients with lesions in the prefrontal cortex suffered from impairments in the ability to make real-life decisions because of an insensitivity to future consequences, whether reward or punishment); Antoine Bechara et al., Dissociation of Working Memory from Decision Making Within the Human Prefrontal Cortex, 18 J. Neurosci. 428, 428, 434 (1998) (prefrontal cortex is necessary for decision-making in tasks involving evaluation of risk and reward); Antonio R. Damasio & Steven W. Anderson, The Frontal Lobes, in Clinical Neuropsychology 404, 434 (Kenneth M. Heilman & Edward Valenstein eds., 4th ed. 2003) (one “hallmark of frontal lobe dysfunction is difficulty making decisions that are in the long-term best interests” of the individual); see also Elizabeth R. Sowell et al., In Vivo Evidence for Post-Adolescent Brain Maturation in Frontal and Striatal Regions, 2 Nature Neurosci. 859, 860 (1999) (frontal lobes are essential for planning and organization); see also, e.g., Elkhonon Goldberg, The Executive Brain: Frontal Lobes and the Civilized Mind 23, 24, 141 (2001); see also B.J. Casey et al., Structural and Functional Brain Development and its Relation to Cognitive Development, 54 Biological Psychol. 241, 244-246 (2000).


14 Arnett, supra note 1, at 344, 350-351 (noting that adolescents’ distortion of perceived risks and rewards may explain why half or more adolescents reported driving while intoxicated, engaging in sex without contraception, illegal drug use, or some form of minor criminal activity).


21 See, e.g., Alan S. Waterman, Identity Development from Adolescence to Adulthood, 18 Developmental Psychol. 341, 355 (1982) (“The most extensive advances in identity formation occur during the time spent in college.”); Laurence Steinberg & Robert G. Schwartz, Developmental Psychology Goes to Court, in Youth on Trial 9, 27 (Thomas Grisso & Robert G. Schwartz eds., 2000) (“[M]ost identity development takes place during the late teens and early twenties.”); Scott & Steinberg, supra note 10, at 52 (coherent integration of identity does not occur until late adolescence or early adulthood; the final stages of this process often occur in college years).

22 Moffitt, Adolescent-Limited and Life-Course-Persistent Antisocial Behavior, supra note 2, at 685-686; Steinberg & Scott, supra note 5, at 101-1015.


