

# THE ADOLESCENT BRAIN

Next to infancy, early adolescence is the most dynamic period for brain development, also known as a window of opportunity, making this an ideal time to gain and maintain new skills.

WINDOW OF OPPORTUNITY

AGE  
~5

AGE  
9

WINDOW OF OPPORTUNITY

AGE  
14

AGE  
25

**The brain reaches its maximum size in early adolescence and fully matures when individuals are in their mid-20s.**

The pre-frontal cortex, which is responsible for emotional regulation, decision making, and planning, is one of the last brain regions to mature.

**Adolescent brains are primed for novelty and sensation-seeking.** Puberty triggers an increase in dopamine receptors in the brain's reward centers, which means exciting experiences can feel really good in adolescence! At the same time, the pre-frontal cortex has not fully matured to regulate these strong sensations. The dopamine release from substance use coupled with increased sensation-seeking behavior can also make adolescents more prone to addiction.

The change in color from red to blue illustrates an increase in white matter, which is related to brain maturation and more efficient signaling between brain cells.



### Adolescents think and act differently, depending on the context.

Adolescents are good at making rational decisions in cold cognitive situations (situations that are calm and not emotionally arousing). However, in the heat of the moment—hot cognitive situations—adolescents' decisions are based more on what they're feeling and less on what they're thinking.



### Adolescent brains are sensitive to stress and trauma.

Without the buffering support of safe and supportive relationships and environments, stress and trauma can impair brain structure and function, affecting emotional regulation and other executive functions.



### Adolescents are more likely to take risks in front of peers.

The mere presence of peers, in physical or digital space, activates the reward circuitry in the brain, leading to an increased tendency to seek out novel experiences and excitement.



### The adolescent brain is shaped by experience.

The process of trying new things, learning from them, and failing—with the support of caring adults—is essential for developing and learning new social, emotional, and problem solving skills.



### Risk-taking is a normal part of adolescence. To support healthy risk-taking and positive learning experiences, adults can take these actions:

- Teach adolescents about the opportunities and vulnerabilities of their developing brain
- Support opportunities for healthy risk-taking, such as public speaking or trying a new hobby
- Provide youth with practice for heat-of-the-moment decision-making, especially in front of peers
- Support young people to recognize and regulate strong emotions
- Encourage youth to reflect, learn, and grow from their experiences
- Teach and model healthy coping skills, like self-regulation and effective problem solving.
- Harness the positive power of peers to encourage health-promoting experiences (e.g., invite influential peers to share positive information on sexual health and healthy relationships, use in-class peer leaders to model and facilitate key activities, provide service-learning experiences with peers and friends)
- Facilitate connections to mental health services and supports

### Learn more!

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