

Adolescent Brain Development and Risky Teenage Behavior



Raising a teenager can be stormy and stressful at times. Adolescents may have a hard time making good decisions, yet they are a member of their school's Honor Society. They may appear to be self-centered, but then they volunteer at the local Boys and Girls club. Parents worry when they earn their driver's license, but may soon see that their driving record is spotless. Watching movies and playing video games at home may make a teenager seem lazy, when in reality they have a busy schedule. Teens often wear many hats. They make mistakes and may partake in risky behavior from

time to time, but much of their behavior is the result of identity exploration and an undeveloped brain. From this behavior, teens learn and grow. As adults who interact with teens, it is important to keep in mind that the adolescent brain is "still under construction" and it will remain in this transition period until approximately the mid-twenties. While the teenage brain is influenced by many factors, including genetics, personal history and agents of socialization (family, friends, community, culture), there is support that links risky behavior, lack of thinking and poor judgment to brain development. Therefore, it is important to understand the changing adolescent brain and subsequent behavior.

The brain continues to go through many changes in adolescence

There was a time when it was believed that the brain was completely developed by the teenage years. With advanced medical and brain-imaging technologies, researchers now recognize that the brain continues to go through many changes in adolescence and that these changes affect the ways in which a teenager makes decisions and forms mature judgments.

As the brain develops, two basic processes take place—synaptic pruning and the strengthening of synaptic connections. Synaptic pruning refers to a regulatory process that reduces the overall number of neurons and connections that are needed for brain functioning. While it sounds destructive, pruning is necessary for brain development because it reduces weak and unnecessary synaptic connections (signals between cells), which allows the more useful connections to become stronger. This occurs in childhood, throughout adolescence and even into early adulthood. As a result, the ability to think and solve problems improves with age. But, this process does not occur evenly across the brain. Instead, it starts in the back of the brain, which controls sensory functioning, including vision, touch and sensation. Then it moves to the area of the brain responsible for coordination. It is not until late adolescence that pruning and synaptic connections become stronger in the front part of the brain, which is responsible for decision making, problem solving and thinking. As a result, complex thought, including judgment, is the last to mature. In fact, researchers now believe that a brain is not fully developed until approximately age 25.

There are also changes occurring in the parts of the brain related to self-

awareness and self-concept. These changes may be responsible for increased self-consciousness and susceptibility to peer pressure.

Hormones target specific areas of the brain responsible for emotional regulation and control

Having a testy teenager may be due to the immense hormonal changes that take place during adolescence. In addition to reproductive hormones associated with sexual development, growth and behavior, there are also stress hormones that affect the brain and social behavior. Hormonal rushes, for example, may set off the amygdala, the brain's center for emotions. The amygdala can trigger risky or thrill-seeking behavior because the control-oriented parts of the brain, which manage judgment, are not yet developed to tell a teen not do something just because it feels good. As a result of different areas of the brain



developing at different times, in addition to hormonal rushes, teens are more prone to risky behavior and bad decisions, such as binge drinking, drug abuse, smoking, body piercing/tattooing, unprotected sexual activity, thrill-seeking, fighting, dangerous driving, truancy and even illegal activity.

It's all about me!

As teenagers try to figure out who they are and what they want, amidst their developing brain and raging hormones, parents may have a challenging time meeting their teenager's expectations. Teens are often self-absorbed with their own thoughts, attitudes and values. They imagine that they are under everyone's scrutiny and attention with everything they say and do. This means that something as simple as a "bad hair day" can turn into a major catastrophe! Yet when a parent tries to help, a sensitive teen may interpret such parental concern as criticism or meddling. Self-centered and absorbed in their own feelings, a teen very often believes that only he/she knows the extent of their own anguish or pleasure and that a parent could not possibly know anything about it.

In addition, teens also believe that nothing bad can happen to them—that bad things only happen to others. They

may continue to text and drive because it is their belief that it is only the "bad" or "stupid" drivers who cannot do so safely. As a result, teens move forward in their poor decision-making and risky behavior.

Moral Development

The changes that take place in a teenager's brain also affect moral development. For example, now that they are capable of engaging in drinking, they have to decide what this means to them and whether or not they want to participate in this activity before they turn 21. In addition, they have to decide if they want to succeed in school and recognize the consequences if they do not. They have to decide who they want to be in society and how they want to fit in. They have to evaluate the behaviors of friends and peers and decide if they are comfortable with such behaviors and associations with such people. Such decision-making influences not only their adult years, but also their moral behavior. The ability to make moral judgments, however, even with life-threatening behaviors such as drug use or unsafe sex, can take time to develop. In a study of 18-22 year olds, for example, only the 22 year olds carefully considered the moral dilemma of contracting a sexually transmitted disease, including HIV/AIDS.

For teens, their level of moral reasoning has moved beyond obeying rules to avoid punishment or to receive a reward, as they did as younger children to a more conventional way of thought, which includes, conforming to society—and to their friends. The desire of a teen to conform to his/her peer group can be a challenge to a teen’s moral reasoning, especially if dangerous or risky activities are involved. The more opportunities that parents can provide teens with experiences to practice their moral reasoning, the more apt teens will be to move toward more advanced moral reasoning.



repeatedly or decisions have negative long-term effects, it is important to help your teen learn a new skill to help him/her make better choices.

Teens will be teens, but it will get better

It is not easy being a teenager. Therefore, as adults, it is important to avoid controlling every decision a teen makes. Let them try new things and learn from their mistakes. With each life lesson, teens are provided with opportunities to learn both positive and negative consequences, which will help them better handle independence and responsibility. Eventually, with appropriate guidance and support, teens will be able to start making healthy decisions on their own. However, if rules are broken

As the brain continues to develop and more experiences are accumulated, a teenager’s awareness, imagination, judgment and insight will continue to mature. Teenagers will also become better at reasoning and exploring logical solutions to both abstract and concrete thoughts, and they will better be able to plan and think ahead. In addition to being better able to reflect on their own thinking, teens will get better at thinking more about how others are motivated and how they think and feel. While this may influence a teen to “negotiate” at this age, they will also likely start to see themselves in a broader context and show more interest with social, political and moral issues.

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April 2017

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