



FACT SHEET

Adolescent Brain Development

Most parents know that teenagers don't think like adults. Teens can be impulsive, overly influenced by peers and not good at thinking through the consequences of their actions. Advances in neurobiology have demonstrated that the human brain is still developing into the mid-twenties.

Your inner grown-up

Particularly late in developing is the prefrontal cortex, which is essential for judgment. The prefrontal cortex is the seat of reasoning, the place that says: "Yes, it might be fun and exciting to bungee jump off a bridge, but you could be seriously injured and you'd be breaking the law."

Scientists used to think that the brain's structure was fully developed by age six. In fact, we now know the prefrontal cortex begins growing again as a child enters puberty and doesn't finish until age 25 or later.

How do scientists see inside a brain?

Functional magnetic resonance imaging (fMRI) allows researchers to literally look inside a brain and see which areas are at work.

As adolescents age, they call on different parts of their brains in performing tasks. For example, a Harvard study showed teens photographs and asked them to identify the emotions on the faces in those pictures. Younger teens used the amygdala, the brain center where gut reactions are born. Older teens used the frontal lobe, associated with reason. The older teens scored better on the test.

Several researchers have enrolled adolescents for long-term studies. Over the course of years, they have actually seen changes like these in the brain's structure and function extending into the early twenties.

Implications for juvenile justice

Brain science played a big role in the Raise the Age campaign. Legislators learned that it was unfair to hold 16-year-olds to adult standards when they simply were not equipped with adult judgment.

This is not to say that teens have the right to do anything they want with no consequences. It does, however, mean that we should not give up entirely on a young person for using bad judgment.

Again calling on the wisdom of average parents, we know that with time and guidance young peoples' judgment will improve dramatically. In the meantime, we must keep these truths about their brain development in mind as we develop appropriate consequences for their behavior.