



Anatomy of a Teenager's Brain

NEW RESEARCH FINDINGS ON THE DEVELOPING TEEN BRAIN SUPPORT THE IMPORTANCE OF PREVENTION

Uncharacteristic behaviors, unpredictable mood swings...parents of adolescents often wonder what's going on inside a teenager's brain that makes them act the way they do. Thanks to innovative new scientific advances, we're learning that it's more than *what* teens are thinking...it's about *how* they think!

Recent scientific studies indicate that the adolescent brain undergoes substantial change and maturation in the teen years and well into the mid-20s. This research on the developing teen brain offers important insight to help explain why teens tend to be more impulsive and why rates of substance abuse and risky behavior are far greater for this age group than others.

According to the National Institute of Mental Health (NIMH), a new study performed by researchers David Sturman and Bitu Moghaddam at the University of Pittsburgh measured the activity of single cells in the brains of adult and adolescent rats to identify the roots of differences in brain function. Scientists were able to watch how the adolescent brain responds to rewards resulting from behavior in real time.

The study, recently published in the *Journal of Neuroscience* entitled "Reduced neuronal inhibition and coordination of adolescent prefrontal cortex during motivated behavior," showed that even when adult and adolescent rats behaved in exactly the same way in order to receive a food reward, the pattern of firing of single cells in their brains was different. Reduced inhibition of neuron activity shown in adolescents could suggest that they may respond more intensively than adults to reward. These more intense responses may help to explain the increased vulnerability of adolescents to the rewarding effects of alcohol and drugs. To read more about the study, please visit the NIMH web site at www.nimh.nih.gov.

Monitoring how the adolescent brain processes events differently than the adult brain offers a powerful way to understand the vulnerabilities of young people at this age. It further points up the necessity to develop ways to intervene early with teens.

Visit the interactive *Be The Wall* web site at www.bethewall.com and take the pledge to keep alcohol out of the hands of our teens, so they will enjoy a safe alcohol and drug free graduation .