

## **Teenagers, Friends and Bad Decisions**

**By *TARA PARKER-POPE***

Why do otherwise good kids seem to make bad decisions when they are with their friends? New research on risk taking and the teenage brain offers some answers.

In studies at Temple University, psychologists used functional magnetic resonance imaging scans on 40 teenagers and adults to determine if there are differences in brain activity when adolescents are alone versus with their friends. The findings suggest that teenage peer pressure has a distinct effect on brain signals involving risk and reward, helping to explain why young people are more likely to misbehave and take risks when their friends are watching.

To test how the presence of peers influences risk taking, the researchers asked 14 young teenagers (ages 14 to 18), 14 college students and 12 young adults to play a six-minute video driving game while in a brain scanner. Participants were given cash prizes for completing the game in a certain time, but players had to make decisions about stopping at yellow lights, and being delayed, or racing through yellow lights, which could result in a faster time and a bigger prize, but also meant a higher risk for crashing and an even longer delay. The children and adults played four rounds of the game while undergoing the brain scan. Half the time they played alone, and half the time they were told that two same-sex friends who had accompanied them to the study were watching the play in the next room.

Among adults and college students, there were no meaningful differences in risk taking, regardless of whether friends were watching. But the young teenagers ran about 40 percent more yellow lights and had 60 percent more crashes when they knew their friends were watching. And notably, the regions of the brain associated with reward showed greater activity when they were playing in view of their friends. It was as if the presence of friends, even in the next room, prompted the brain's reward system to drown out any warning signals about risk, tipping the balance toward the reward.

"The presence of peers activated the reward circuitry in the brain of adolescents that it didn't do in the case of adults," said Laurence Steinberg, an author of the study, who is a psychology professor at Temple and author of "You and Your Adolescent: The Essential Guide for Ages 10 to 25." "We think we've uncovered one very plausible explanation for why adolescents do a lot of stupid things with their friends that they wouldn't do when they are by themselves."

Dr. Steinberg notes that the findings give a new view of peer pressure, since the peers in this experiment were not even in the same room as the teenager in the scanner.

"The subject was in the scanner, so the friends were not able to directly pressure the person to take chances," Dr. Steinberg said. "I think it's helpful to understand because many parents conceive of peer pressure as kids directly coercing each other into doing things. We've shown that just the knowledge that your friends are watching you can increase risky behavior."

Dr. Steinberg notes that the brain system involved in reward processing is also involved in the processing of social information, explaining why peers can have such a pronounced effect on decision making. The effect is believed to be especially strong in teenagers because brain changes shortly after puberty appear to make young people more attentive and aware of what other people are thinking about them, Dr. Steinberg said.

The study results are borne out in real-world data that show teenagers have a much higher risk of car accidents when other teenagers are in the car. More study is needed to determine if the effect shown in the game study is the same when teenagers are in the presence of an opposite-sex friend or romantic interest. In the study, there were no meaningful differences in risk taking among boys and girls. However, some real-world driving data suggests that teenage boys take more risks behind the wheel when one or more boys are in the car, but drive more carefully if they are with a girlfriend.

For parents, the study data reinforce the notion that groups of teenagers need close supervision.

“All of us who have very good kids know they’ve done really dumb things when they’ve been with their friends,” Dr. Steinberg said. “The lesson is that if you have a kid whom you think of as very mature and able to exercise good judgment, based on your observations when he or she is alone or with you, that doesn’t necessarily generalize to how he or she will behave in a group of friends without adults around. Parents should be aware of that.”