

# Why Teenagers Act Weird

## New research shows what really causes your teen's weird behavior--and what to do about it

by Sarah Mahoney

### Intro

Until recently, parents had only one explanation for the baffling behavior of teens: Clearly, they were hijacked by their rampaging hormones. But more and more, experts are discovering that the real reason for the eye rolling, sullen behavior and burning desire to do stupid things that mark the turbulent adolescent years isn't just teens' surging hormones--it's their brains.

Not long ago, neuroscientists thought that the human brain finished developing at an age when kids still believed in the Tooth Fairy: By age 6, a child's brain has already achieved 95 percent of its adult structure. And research, much of it based on brain scans of infants, shows that neural connections form at a dizzying speed during the period from birth to age 3. But brand-new research has uncovered a second period of rapid brain development, stretching from preadolescence through the early 20s (peaking around 11 for girls and 12 1/2 for boys). "The brain is undergoing more change now than at any other time, except just after birth," says Linda Spear, PhD, professor of psychology at Binghamton University in New York.

New connections are being made throughout the adolescent brain, even in the gray matter where we do most of our rational thinking. What's more, the brain is feverishly reshaping itself, "pruning neural connections at the rate of 30,000 per second," Spear says, "producing a leaner, meaner brain."

The biggest changes are occurring in the brain's prefrontal cortex, located right behind the forehead, which governs "executive" thinking: our ability to use logic, make sound decisions, and size up potential risks. Knowing that this decision-making area is still under construction explains plenty about teens. Researchers have found that even in those who generally show good judgment, the quality of decision-making fizzles in moments of high arousal. Emotion, whether happiness, anger, or jealousy--particularly when teens are with their peers--overrides logic, making even the smart ones momentarily dumb.

This phenomenon may help to explain why one teen starts smoking even though she knows it will hurt her track times, and another shoplifts a pack of gum when he has \$5 in his pocket.

It works like this, says Elizabeth Cauffman, PhD, a psychologist at the University of Pittsburgh: Your 16-year-old knows when he pulls out of the driveway on a Friday night, that drinking and driving is (a) dangerous and (b) will get him grounded for life. Yet in a peer group, a heightened emotion--such as anger at being called chicken--trumps knowledge. Very likely, he'll guzzle that pint of peach schnapps anyway. Ask him later what he was thinking, and he will honestly answer: "I wasn't."

The fact that their "thinking brains" are works-in-progress also affects teens' abilities to assess and respond appropriately to the emotions of others--and their own. A study at McLean Hospital in Belmont, MA, for example, found that teens read facial expressions differently, and less accurately, than adults do. When researchers showed a small group of adolescents (ages 12 to 17) several photographs of faces with fearful expressions, many of the kids--particularly the younger ones--misread some of the looks as surprise, anger, or confusion. (In similar studies, adults correctly identified the faces as "fearful" every time.) While the teens were reviewing the photos, MRI scans of their brains showed increased activity in the amygdala (the part of the brain that governs immediate, or gut, reactions and plays a leading role in impulsive action). Adults, on the other hand, have been shown to use the frontal cortex to assess similar photos, which enables them to better distinguish subtleties in expression.

### This Preserves the Species?

While living amid all this brain turbulence isn't much fun for anybody (especially your teen), scientists think typical adolescent characteristics like defiance and risk taking may serve a valuable evolutionary purpose. Animal species in which adolescents left the pack and mated with a more diverse gene pool may have become much stronger, Spear says. Those with meek juveniles most likely had a higher risk of inbreeding, which can lead to extinction. "It's possible this teenage defiance in many species has just become instinctive, and while it's no longer useful to us--and in fact is dangerous--it may take evolution eons to catch up," she says.

Whatever, the timing is terrible. Your teenager's brain is remodeling just as modern society gives him wider access to deadly weapons: cars, alcohol, cigarettes, drugs, guns. Children between the ages of 15 and 19 are three times more likely to die from all causes--with accidents, murder, suicide, and drugs all playing a role--than those ages 10 to 14, reports the National Center for Health Statistics.

And the number of risks today's teens are taking staggers most parents: Seventy-eight percent of high school students have

tried alcohol, and more than 5 million admit to binge drinking at least once a month. The mean age of first use: 14. One out of five kids has sex before turning 15, reports the National Campaign to Prevent Teen Pregnancy, and many don't understand the risk of AIDS (so they may not take precautions to prevent it). About 58 percent of teenage boys don't wear seat belts--the lowest number of any group of licensed drivers.

### **Finally, Good News**

Scary though the teen years are for parents, there's some hopeful news: Most kids not only survive, they flourish. Around age 16 or 17, Cauffman says, they start becoming more emotionally mature. (Whether this change is due to brain maturation is still under investigation, but the connection seems likely.) Older teens are better able to control their impulses, so reason has a chance to triumph over toilet-papering the neighbor's trees. And Spear estimates that 80 percent of kids grow into happy adults. Many of the remaining 20 percent--some unhappy, others plagued by such serious problems as substance abuse, depression, or schizophrenia--may sort themselves out eventually, too.

What's more, the teen brain's enormous plasticity also means that in some ways, this part of life is plenty of fun. Young people learn (and master) countless athletic skills, hobbies, interests, and passions, and make huge strides in academic learning. Here are 12 ways experts say you can protect and nurture your teen while body and brain catch up with each other:

#### **1. Be Strong and Be There**

Many parents, faced with a sullen teen, back off just when they're needed most. In fact, today's teens require hands-on parenting like never before. They're faced with more options (Should I take vocational classes or college prep? Play sports or get a job? Have sex or abstain?), yet they've never had to get by with so little help from caring adults because of divorce, parents' work schedules, and less contact with extended family, says Laurence Steinberg, PhD, professor of psychology at Temple University. Maintaining close contact, of course, isn't easy. Parents often say that every exchange turns into an argument. Stand your ground when it's in your teen's best interest (and when you're afraid of being the bad guy, it's good to remind yourself that it truly is in her best interest). Low-conflict chats are golden--look for every opportunity to start one. One way:

#### **2. Eat Dinner Together**

Teens who eat dinner with their families six or seven nights a week are about half as likely to abuse drugs and alcohol as those who eat dinner together twice or less, according to a recent study from Columbia University's Center on Addiction and Substance Abuse.

### **Kids Involved in Sports Stay out of Trouble**

#### **3. Let 'em Sleep**

New research from Brown University shows many teens are in a state of nearly constant sleep deprivation. While the average teen sleeps just over 7 hours a night, he needs 9 1/4 hours, and without plenty of high-quality REM sleep, teens can't learn well. It's kind of a cruel joke: The circadian clock, which governs sleep, pushes adolescents to stay up later and later at night, but it doesn't help them wake up in the morning. Melatonin, for example, the chemical that governs sleep, kicks in around 10:30 pm. That's why kids want to chat with their friends or start their homework when you're ready for bed. (This all changes by early adulthood.) Sniff for traces of tobacco, too: In addition to smoking's other risks, nicotine interferes with kids' sleep patterns.

#### **4. Give 'em Safe Thrills**

Taking risks--particularly in groups--is a powerful urge. Don't fight it, experts say. Encourage adventurous kids to find ways to scratch this itch other than playing chicken on the highway. Scuba diving, rock climbing, mountain biking, skiing, snowboarding, and surfing are all great ways for them to explore their wild side while learning to make good decisions. Older teens can be junior firefighters or volunteer with the local ambulance squad.

#### **5. Insist on Extracurricular Activities**

About 40 percent of a typical teen's waking hours are discretionary, and researchers have found strong correlations between a lot of free time and early sexual activity, drug use, drinking, and delinquency. Conversely, kids who consistently participate in extracurricular activities have better communication skills, fewer psychosocial problems, and decreased drug and alcohol use and involvement in violence; they also experience increased academic achievement. But they don't have to be scheduled for something every waking minute: Even kids involved in supervised extracurricular activities for as little as 1 to 4 hours a week are 49 percent less likely to use drugs and 37 percent less likely to become teen parents, reports the US Department of Health and Human Services. Involvement in sports is particularly effective at preventing risky behaviors in both boys and girls. Studies show that teens who exercise on their own are also less likely to use drugs or engage in risky sexual activity than their non-exercising peers.

#### **6. Talk about the Real Risks of Drinking**

Teens and alcohol have always been a bad combination: Drunk teens do stupid things, and early exposure to alcohol increases the odds of your child becoming an alcoholic. (Kids who begin drinking before age 15 are four times more likely to develop alcoholism than those who don't drink until 21, according to a study in the *Journal of Substance Abuse*.) But researchers are now recognizing even more alarming risks: Teens who experiment early with alcohol appear to do permanent damage to portions of the brain that govern memory and problem-solving skills. Recent research from the

University of California, San Diego, for example, found that teens ages 15 to 17, with a history of 100 drinking episodes, were "found to use fewer strategies when learning new information, and retain less information." They also had poorer attention skills, and MRIs revealed lower memory function. Duke University researchers, experimenting with laboratory animals, have found that the hippocampus, the portion of the brain that governs emotion and memory, is ultra sensitive to alcohol during adolescence and actually shrinks.

### **7. Put 'em to Work**

University of Minnesota sociologist Jeylan Mortimer found that teens who hold down an after-school job (working as much as 20 hours a week) get many benefits their nonworking peers don't, including improved confidence, time-management skills, academic success, and an increased ability to manage on-the-job stress when they become adults. Plus, having more interaction with unrelated adults provides a new source of role models and can buffer strains at home.

### **8. Watch Their Wallets**

Kids with too much spending money are not only more likely to smoke cigarettes, they are also more likely to use drugs, including alcohol. The highest-risk group? Teenage girls with access to more than \$50 a week. Limit your daughter's allowance, and if she's working an after-school job, make sure you're keeping track of how much she makes and where it goes. (Some should be going into a car fund.)

### **Cigarettes Today, Booze Tomorrow?**

#### **9. Get Up on Your Soapbox**

While it's easy to believe teens are totally tuning parents out, a Roper poll found that 71 percent of teens say that parental influence has stopped them from using alcohol. Another study found that teens with mothers who voiced their disapproval of teen sex were more likely to abstain than those with mothers who kept their opinions to themselves. What's more, 88 percent of teens say it would be easier for them to postpone sexual activity if they and their parents could have more honest, open conversations about sex. Car rides, in which kids are a captive audience, can be good times to start such conversations, but experts also suggest using something in your child's world as a jumping-off point. So share what you really think about the sexual values expressed in the lyrics to "Shake Your Tail Feather."

#### **10. Appeal to Their Vanity**

Psychologists attribute kids' resistance to health warnings to a trait called cognitive egocentrism, says Allan Williams, PhD, a social psychologist and teen-driving specialist at the Insurance Institute for Highway Safety. "They think, 'Bad things happen to other people, not to me.'" Experts say calling on their vanity--and other short-term, here-and-now concerns--is a good way to pierce that bulletproof demeanor. "Smoking ruins your skin," "Genital warts are hideous," and "They don't make maternity prom dresses" all resonate with kids in a way that long-term consequences don't.

#### **11. Respect Their Privacy, but Know When It's Time to Snoop**

"A good parent-child relationship is based on trust," says Ruth Peters, PhD, clinical psychologist and author of *Laying Down the Law*. That means, as a rule, keeping your paws off your teen's e-mail and diary, and out of her dresser drawers. If you suspect that your child is engaging in illegal or dangerous activities, talk to her about it first. If she denies it and you have proof or feel strongly that she's lying, it's not just your right but your responsibility to snoop. How will you know if your teen is heading for trouble? Red flags include depression, substance use, a dramatic decline in grades, or anything that suggests your teen might be thinking about suicide--such as threats, an obsession with death, giving away personal belongings, changes in eating or sleeping patterns, loss of interest in previously enjoyable activities, and exaggerated changes in appearance or behavior.

#### **12. Understand What Matters to Kids**

That would be everything, even things you think shouldn't. Multiply your child's brain tumult by the number of kids in the school cafeteria, and you'll see just how unstable her world is. Try not to be too judgmental. When education writer Linda Perlstein spent a year trailing a group of sixth, seventh, and eighth graders to write *Not Much Just Chillin': The Hidden Lives of Middle Schoolers*, she was stunned by how quickly a clique could embrace one child or shun another. She watched one girl, for example, move from a popular crowd to virtual Siberia practically overnight, with no clue as to why. "I don't even think the girls who were excluding her knew why," Perlstein says. Given that volatility, she adds, it's not hard to understand why kids are such fierce conformists--at least, when it comes to their peers--insisting on the right jacket, the right shoes, the right pants. "Can you imagine the bravery it would take, at age 12, to be a trendsetter?"