What's Going On In

YOUR TEEN'S BRAIN?

EXPERTS SEE THE TEEN YEARS AS A TIME TO THRIVE, NOT JUST SURVIVE

BY DEBRA BRADLEY RUDER

Elated to finally have his driver's license, your 17-year-old son desperately wants to take his friends for a spin around town—despite the six-month waiting period in your state for minors driving minors. Ignoring the risks if he gets caught (suspended license) or has an accident (injuries and lawsuits), your son goes ahead. Everyone arrives home safely, but you are fuming.

Every parent of a teenager recognizes this kind of maddening, impulsive behavior of smart kids who sometimes do foolish things without thinking through the consequences.

Just remember that it's not completely their fault: Their brains are not done maturing, and they've been shaped by evolution to test boundaries, make social connections, and seek their independence.

When it comes to the brain, adolescence is a period of extraordinary change, rivaled only by the first few years of life. Gray matter (brain volume) peaks around 11 to 14 for girls and a bit later for boys—and then begins thinning as it becomes more specialized. With their brains in high-change mode (this is called plasticity) and synapses building quickly, teenagers are primed for learning in school and beyond.

Unfortunately, this plasticity also makes teens vulnerable to negative influences like drugs and alcohol, according to Frances E. Jensen, MD, chief of neurology at the University of Pennsylvania's Perelman School of Medicine. And although sharp and spongy, young people haven't yet developed the "executive skills" to dampen their urges. Sections of the brain mature at different rates, and the frontal lobe of the cortex—responsible for planning, reasoning, problem solving, and impulse control—is the last to finish, typically in the mid- to late-20s.

"It's like driving a car with a sensitive gas pedal and bad brakes," explains Laurence Steinberg, PhD, a developmental psychologist at Temple University who has studied adolescence for 40 years. Steinberg says the transition to adulthood now spans ages 10 to 25 because of early puberty, later financial independence, and other factors. "Today adolescence begins much earlier, it ends much later, and it is far more important in determining health, success, and happiness in adulthood than it has ever been," he writes in his new book *Age of Opportunity: Lessons from the New Science of Adolescence*.

The good news, experts say, is that parents can help their teens take advantage of this important cognitive stage—and begin rebranding adolescence as a period to appreciate, not one to dread and endure.

Communicate

"My big advice is: Stay close. Do not allow alienation to occur," Jensen reflected in a recent interview. "Find some common ground and stay communicating—

because you're a role model for your teens, even though they won't admit it. They are still imprinting on how you manage your life. They're watching."

Steinberg advises engaging your kids in spirited discussions at home (or in the car) as a way to promote intellectual development. "A lot of parents get nervous about their kids challenging them; they think it's a threat to their authority," he says. "But if you want to raise an assertive, curious, and thoughtful person who's going to stand up for what she thinks is right, you have to tolerate—and maybe even encourage—some of that at home, too."

Give Them Space

When it comes to helicopter and snowplow parenting, Harvard neurologist David Urion, MD, says it's better to give teenagers "running room" to try new things (as long as they're safe and legal) and make decisions on their own, rather than hovering and clearing the way. If too many decisions are made for them, Urion warns, teens may not develop the critical thinking skills so necessary in life.

"Brains learn from experience, and we have to give young people experience that doesn't have too many safety nets," says Urion, of Children's Hospital Boston and Harvard Medical School. "Just enough, but not too many." If conflicts arise, listen to your teen's viewpoint, offer your opinion, find a compromise, and then accept the results. He says if things backfire for your child, it's better to respond with, "How do we move on?" rather than, "I told you so."

Help Them Manage Risks

Knowledge is power, and Jensen wants teenagers to understand their risks from exposure to drugs and alcohol, multitasking, sleep deprivation, and other stressors "that can leave big scars on development."

In public talks she has given to students, parents, and professionals—and in her forthcoming book, *The Teenage Brain: A Neuroscientist's Survival Guide to Raising Adolescents and Young Adults*—Jensen shares some alarming data from animal research. She notes that alcohol and marijuana interfere with learning at the cellular level and can have lingering effects, that binge drinking kills more brain cells in teens than in adults, and chronic marijuana use can lower your I.Q. Additionally, the sensory overload that comes with multitasking—a habit for many teens these days—can reduce recall. Sleep deprivation can also affect learning and memory; since synapses build during sleep, Jensen says, studying right before bedtime is a good strategy for making the information stick.

Calling the development of self-control "the central task of adolescence," Steinberg says there's some evidence that aerobic exercise and "mindful" activities such as meditation, yoga, and tae kwon do can help young people manage their thoughts, emotions, and actions. He also recommends a parenting style that is warm, firm, and supportive. This includes setting clear but fair expectations and rules, showing affection, being involved in your child's life, focusing praise on effort, and helping your child navigate decisions without intruding too much.

Getting the Most Out of School

Our schools are organized by academic subjects, but our brains are organized by skill sets that cut across disciplines, according to Urion. "Brains don't have math centers or social studies domains," he says. "And learning chemistry is not like learning biology or physics, but we call them all science."

He encourages parents to help students recognize their skill sets—that is, how they process information. If your child complains, "I'm no good at math or foreign languages," try unpacking what's difficult; for example, some people have trouble interpreting complex visual and spatial information, or hearing the rhythm of a language. Getting to know his/her brain may help your child "at least anticipate which subjects may be a slog and which will feel like a comfortable shoe."

Adolescents are shifting toward higher-level abstract thinking. But Steinberg notes that U.S. high schools too often stress memorizing and repeating facts instead of engaging students in the kinds of big philosophical questions they enjoy, like "What is the true meaning of democracy?" or "What does it mean to love somebody?"

Encourage your teen to take challenging classes and keep academic grades in perspective, Steinberg counsels. "Getting good grades so you can get into a good college is important, but there's still a lot of brain development taking place at this stage," he says. "Being challenged will serve your child well as she or he grows up." **LWT**

Teen Brain Reading

The Teen Brain: "Still Under Construction": www.nimh.nih.gov

Age of Opportunity: Lessons from the New Science of Adolescence, by Laurence Steinberg, PhD; due out in September 2014, Houghton Mifflin Harcourt

The Teenage Brain: A Neuroscientist's Survival Guide to Raising Adolescents and Young Adults, by Frances E. Jensen, MD, and Amy Ellis Nutt; due out in January 2015, HarperCollins.

Brainstorm: The Power and Purpose of the Teenage Brain, by Daniel J. Siegel, MD, 2013, Tarcher/Penguin