

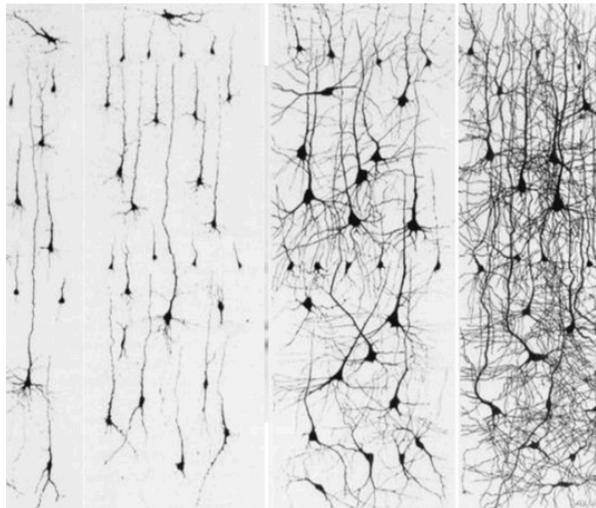
THE NEUROSCIENCE NEWSLETTER

The Developing Brain in Childhood

Children's brains grow through hands-on experiences—touching, moving, and connecting with people. Before age ten, the brain is especially plastic, wiring itself according to what it experiences most. When daily stimulation comes from screens instead of play, conversation, or exploration, the brain misses chances to build deep neural connections that support focus, problem-solving, and empathy.

Early experiences matter. Reading aloud, building, pretending, and playing outside strengthen the neural pathways for attention and creativity in ways that stimulation through technology can't replicate.

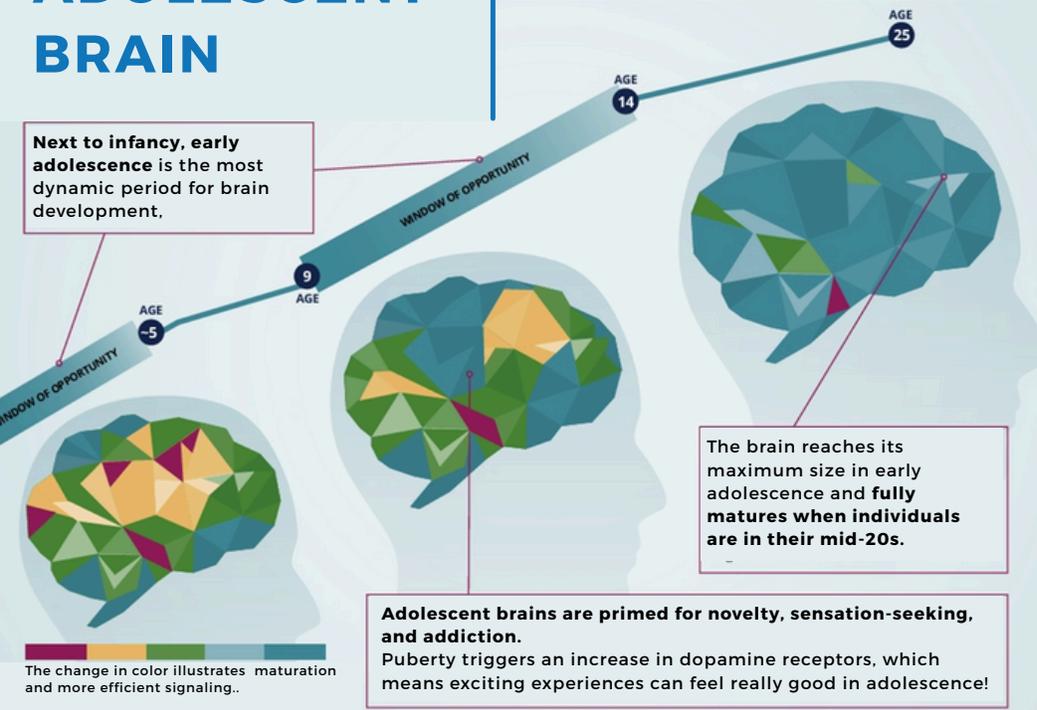
Researchers once believed the first 1,000 days of life were the most critical for brain development. Now we know there's a second window of opportunity—from about ages nine to fourteen—that is just as vital.



At birth, the average baby's brain is about a quarter of the size of the average adult brain. Incredibly, it doubles in size in the first year. It keeps growing to 90% by age five. The early years are also when connections between brain cells are being made at an amazing rate - at least one million new neural connections (synapses) every second, far more than at any other time in life. By age three, neurons get wired to other neurons, forming about 100 trillion connections. Each connection is an opportunity to "learn."

THE ADOLESCENT BRAIN

By the teenage years, the brain is about as big as it will ever be—but it doesn't fully develop the ability to regulate emotions and impulses until around age 25.



Why Teens Feel So Much

If you've ever wondered why your calm, even-tempered child suddenly becomes moody, sensitive, or anxious as puberty hits, you're not alone—and science has answers. Research into adolescent brain chemistry shows that a hormone called THP (tetrahydroprogesterone, or allopregnanolone) behaves differently during puberty than in childhood or adulthood. Normally, THP acts like the brain's natural "calm-down chemical." It attaches to GABA receptors—tiny switches that quiet brain activity—and brings calm during stress.

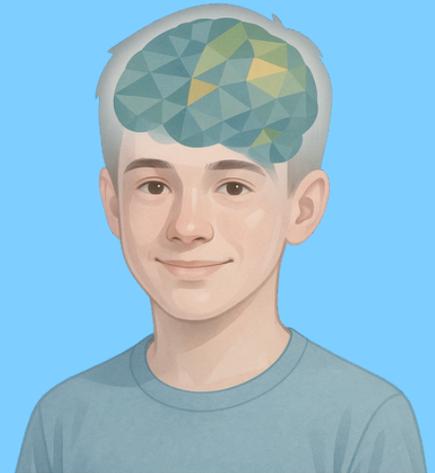
Here's the twist: during puberty, those receptors change shape. THP no longer calms the brain; it can do the opposite. Instead of turning down stress, it may briefly heighten tension, irritability, or anxiety—a "reversal effect." In plain language, a process meant to protect and reshape the brain may also explain why teens experience emotional turbulence. The brain is rewiring, hormones are surging, and even a calming hormone sends mixed messages.

The good news is that this shift is temporary. Once the brain's reorganization is complete—usually by late adolescence—THP returns to its calming role. What looks like a rollercoaster of moods is actually part of an incredible remodeling process that makes the brain more flexible, adaptive, and ready for adulthood.

A Work in Progress

During adolescence, the brain undergoes major renovation. The emotional center—the limbic system—develops early, while the prefrontal cortex, responsible for judgment, impulse control, and long-term planning, won't fully mature until around age twenty-five.

That means teens are driving with a sensitive accelerator pedal (emotion and reward systems) but a still-developing brake pedal (reasoning and self-control). They feel emotions intensely and act quickly, often before their "brakes" can catch up. It's not defiance—it's development.

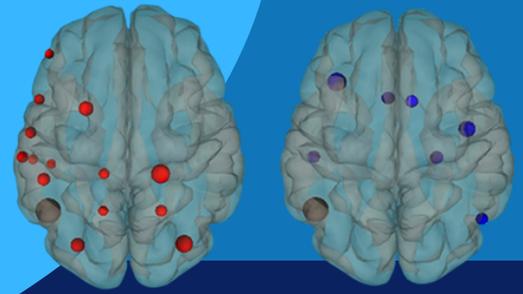


One of the systems that changes most during this time is the brain's reward network. A surge of hormones and dopamine heightens the sense of pleasure from exploring the world, taking risks, and learning new things. This powerful drive motivates teens to seek novelty, challenge, and independence—all essential for growth.

At the same time, the social brain goes through a major remodel. Adolescents become finely tuned to facial expressions, tone, and social approval. Their need to belong, earn respect, and contribute to a group becomes powerful, helping them learn to navigate the complex social world in a way that prepares them for adulthood.



“ Parent and child brains synchronize more when reading print books together. ”



The dots indicate brain connections. The (L) Brain has spent more time reading, the (R) on screens.

Read to Your Child for a Stronger Brain

New research from neuroscientist Tzipi Horowitz-Kraus shows that when parents read printed books with their children, it does more than build vocabulary—it strengthens the brain’s wiring for attention, imagination, and emotional connection. Brain imaging studies reveal that children who read more with parents have stronger links between regions for language and comprehension, while those who listen to stories on screens show weaker connections and signs of overload rather than calm focus.

One study found that preschoolers with more home reading time showed richer brain activity in networks for understanding stories. Another found that parent and child brains synchronize more when reading print books together than when engaging with digital stories—supporting empathy, memory, and focus. The developing brain thrives when a loving adult and a real book are part of the experience.

Parents Still Shape the Teen Brain

We often hear that once kids reach adolescence, peers take the wheel and parents fade into the background. But new research suggests that isn’t quite true.

A study from the University of North Carolina found that when parents and peers offered conflicting advice, teens were more likely to take risks if their parents had modeled that same behavior—not their friends. Brain scans revealed stronger communication between regions linked to reward and decision-making when teens followed their parents’ example.

This finding reminds us that influence flows both ways. Parents are always teaching—not just through words, but through what they model. Adolescents are wired to observe, mirror, and internalize family norms, even when they seem focused on friends.

That’s why prioritizing family connection matters so much. When parents demonstrate patience, empathy, and thoughtful decision-making, their teens’ brains quietly take notes. They watch, learn, and wire themselves through every shared moment.

“I think a lot of parents believe that it’s too late, that by adolescence, peers have all the power,” Silk said. “But this research is showing that parents shouldn’t give up, that they still do have the power to help their adolescents learn how to process and regulate their emotions.”

COMMUNITY NORMS

Prioritize Your Family and Your Values

Core values like avoiding temptation, humility, self-sacrifice, and acknowledging evil are less mainstream than in generations past and must be fought for.

Delay Smartphones Until High School

Smartphones are addictive, heighten anxiety and depression, and expose children to harmful content. Children thrive when they live free from the disordered influence of smartphones.

Delay Social Media Until 16

The evidence is overwhelming: early social media is not only correlated with poor mental health, but is actually causing it.

No Phones in Schools

Families should strive to keep schools free of distractions. School should be a place where children have authentic human experiences, growing not only intellectually, but socially and emotionally.

Dopamine

The Brain's Reward Magnet

Dopamine is the brain's motivation messenger—the chemical that gives us a sense of excitement, anticipation, and satisfaction when we pursue something rewarding. During the teen years, dopamine activity surges to make adolescents more sensitive to pleasure and more driven to seek out new experiences. This is one reason teens love music, adventure, and the thrill of trying something for the first time. Their brains are wired to explore and learn through curiosity and discovery.

Healthy dopamine patterns are built through balance. Exercise, creativity, meaningful social connection, and time in nature all release dopamine in ways that support emotional stability and focus. These activities teach the brain to find reward in effort and growth, not just instant gratification.



When dopamine pathways are overstimulated by constant scrolling, gaming, or endless notifications, the brain adapts. It begins to need more stimulation to feel the same level of reward—a process often called dopamine hijacking. Over time, simple joys like conversation, hobbies, or reading can feel dull by comparison.

Helping teens protect their dopamine balance means encouraging real-life reward systems—effort, progress, relationships, and rest. Guiding them toward healthy challenges instead of constant digital stimulation helps their brains develop resilience, focus, and a true motivational sense.

TAKE THE PLEDGE

To help children grow up well in today's tech-saturated world takes more than personal resolve—it takes community. Behavioral science shows that lasting cultural change occurs in cycles: first comes awareness, then commitment, modeling, and reinforcement. When we shift from a focus on “me” to “we,” we can create strong, permanent change. Together, we can reduce the pressure to conform, strengthen our shared motivation, and support one another through the inevitable bumps along the way.

That's the “why” behind our Pledge to Delay Smartphones. It's not just a personal decision—it's a shared commitment to protect childhood, prioritize connection, and build a healthier culture for everyone.

To take the Smart Pledge, visit www.Smart-Families.org/Smart-Pledge

THE SMART PLEDGE

My family pledges to delay giving our child(ren) a smartphone until high school.

Parents First Name

Parents Last Name

Email Address



Sign the Pledge



Take the Smart Pledge