“Wiring” Your Brain

Your Actions Will Affect How Well Your Brain Works

Our brains develop from birth through adulthood in a process that starts with our genes (the building blocks of who we are that are passed on by our parents) but is shaped by what we do. This means that as a teen, you have a say in who you become because your brain is still developing.

HOW? In our brains there are cells, called neurons, which communicate with each other through connections called synapses. During childhood, your brain makes many more of these connections than you need. This allows you to build skills and strengthen the synapses you use. At the same time, unused synapses die off, in a process called synaptic pruning. This is why the more you do something, the better you get at it.

WHERE’D YOU GET THOSE FANCY SYNAPSES?

The complex network of neurons and synapses in our brains is what allows us to create art, feel emotion, solve problems, and be unique individuals, among many other things.

NEWBORN
A newborn’s brain starts out with at least 100 billion neurons. The brain is focused on basic body functions, such as heart rate, breathing, eating, and sleeping.

0 to 3 YEARS
At its peak, the brain of a toddler may create as many as 2 million synapses a second. The brain is focused on basic skills like talking, playing with others, and following directions.

Think of how you learn to play an instrument. As you practice, your brain activates connections between neurons that control creativity, finger movements, and understanding of music. This increases the strength of these neurons and the speed of the connections. So a skilled musician can learn a complex piece of music more easily than a beginner.
The brain will get rid of synaptic connections that are not used. If you never practice playing an instrument or skip doing the lessons needed for learning a new language, the synaptic connections involved in these skills may die off or become weak. As an adult, you can learn these skills, but it will be harder and take more time.

**Drugs and Brain Development**

Think of your brain like a computer. What if the keys were scrambled? If you typed your name using the keyboard to the right, with your fingers positioned for standard touch typing, your name would come out wrong. If you were typing computer code, your program wouldn’t work.

Similarly, drug abuse during your teen years scrambles how neurons communicate. This can harm your attention, memory, and problem-solving skills—not just as a teen, but well into your future. Teen drug use can even “wire” your brain for addiction, a terrible disease that affects millions of lives.

**More Info:** For additional facts about the brain and drugs, visit scholastic.com/headsup and teens.drugabuse.gov.