

Getting to Know and Love Your Brain

To react or to think it out ... that is the question. The way you use three key players in your brain determines how you'll respond to everything that happens around you. As you learn how to help your brain tell the difference between true emergencies and stressful situations, you'll get better at handling every situation and have more time to enjoy life!

Prefrontal Cortex

(pree-FRUN-tuhl KOR-teks)

The prefrontal cortex, or PFC, is your ace for making thoughtful decisions, doing careful calculations, talking through a problem, and staying focused on what you're doing. Here's the catch: the PFC gets information only when the amygdala is calm. The PFC passes on to the hippocampus anything that is worth remembering.

Amygdala

(uh-MIG-duh-luh)

The amygdala is programmed to keep you safe at all costs. It regulates and blocks information from going to your prefrontal cortex (PFC), so you can react in a flash. The problem is, it can't tell a stressful situation from a true emergency and it can cause you to react without thinking. Mindful practice can help keep the amygdala in check so that you can think clearly.

Hippocampus

(hih-puh-KAM-puhs)

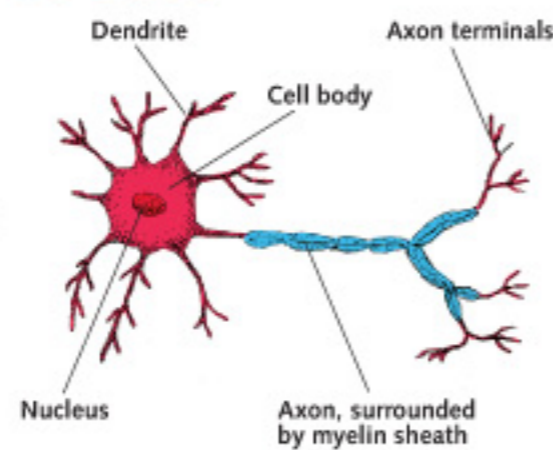
What are your favorite memories? The most useful facts you know? The hippocampus creates, stores, and processes all important facts and memories the PFC passes on to it—such as texting shortcuts, your class schedule, and the deep, warm smell of freshly baked biscuits or bread.

Breathing

Want to keep your amygdala in check when you get stressed out? Breathe deeply. Deep, full breathing calms your amygdala and helps you think and remember clearly.

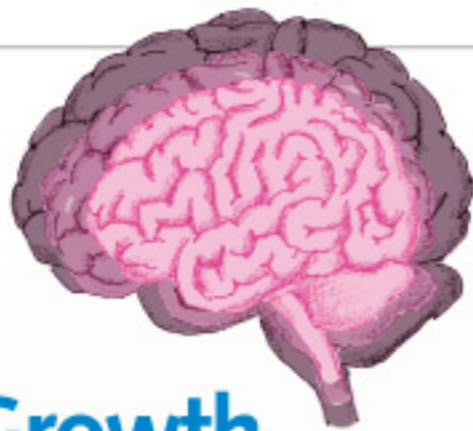
A neuron at work

Your brain has a network of neurons, or brain cells, 100 billion strong to help you think, feel, and remember. Each neuron has three important parts. Dendrites receive information—everything you sense and perceive. The nucleus regulates information signals that are sent or received. The axon sends information to other nerve cells through its terminals. Myelin is the protective coating around the axon.



The green brain?

Your brain has a special energy-efficient feature: myelin. Myelin is to an axon what plastic coating is to electrical wires. Like insulation on a wire, myelin helps the electrical impulses travel quickly and directly through the axon without losing any energy.



Growth spurts!

The brain grows rapidly at two times in our lives:

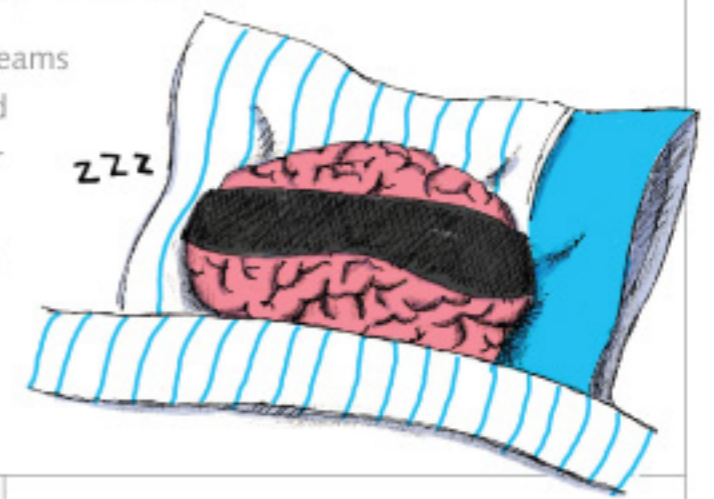
1. From before birth to 3 years old, all the neurons are rapidly growing and creating a network.
2. You're living through the second growth spurt, which peaks at 11 years old in girls and 12 years old in boys. This is when neurons are branching out and making connections.

"Use it or lose it!"

At about age 12, our brains start pruning away all the unused branches to make our brains more efficient.

Sleep and freeze!

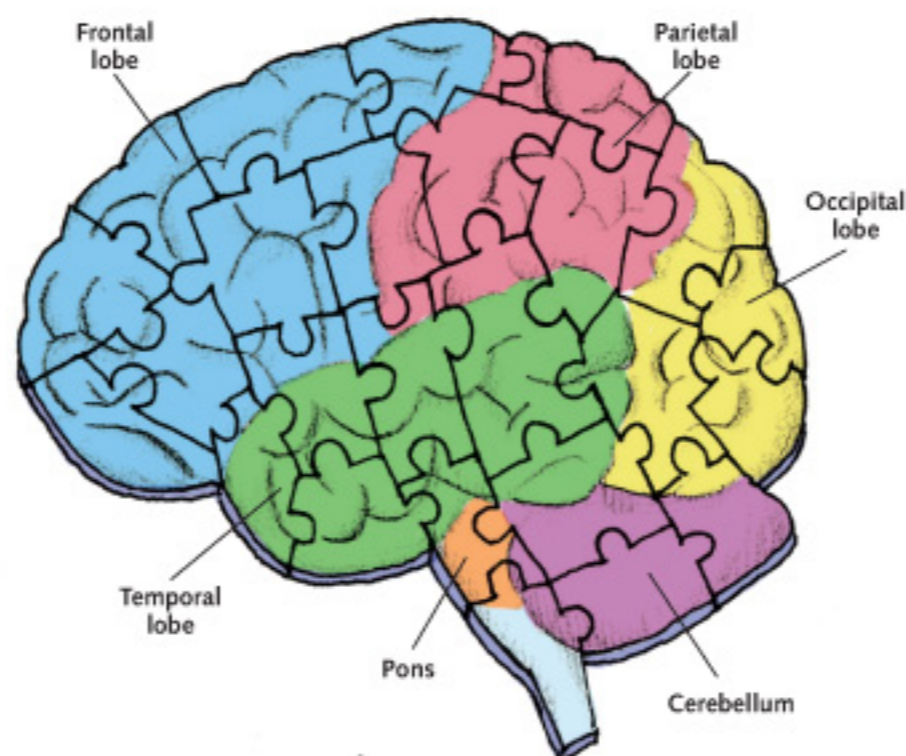
Do you have action-packed dreams or nightmares? Aren't you glad you don't act them out in your sleep? When you fall asleep, your brain releases a hormone that paralyzes you so that you don't move around a lot and hurt yourself.



 SCHOLASTIC

Amazing Facts About Your Brain

Do you enjoy collecting facts to store in your hippocampus? Here's more brain food for that spongy, wrinkly organ inside your skull that loves to solve riddles, puzzles, and problems.



Powering your brain

Each day your brain generates enough energy to light a light bulb—between 10 and 23 watts! How do you keep it powered up to do all that work?

- **Get your Z's.** Getting between 8.5 and 11 hours of sleep each night helps your PFC absorb information and send it to the hippocampus. Being well rested helps your amygdala, too—studies show that alert people have fewer accidents.



- **Eat brain food.** Fuel for thinking includes food high in protein (meat, eggs, beans), omega-3 fatty acids (fish, nuts), antioxidants (berries, broccoli, spinach, whole grains), and vitamin B (clams, lamb, beef), and low in trans fats—so, limit fried foods and fatty sweets!
- **Chat it up.** Staying socially connected with friends and volunteering or playing sports are ways to keep your brain engaged and happy.
- **Protect it.** Brains are hard to fix. To dramatically reduce your chances of concussions or brain injury, wear a seatbelt whenever you ride in a car and a helmet in any high-speed or impact sports. Why take the risk?

