

# BRAIN POWER

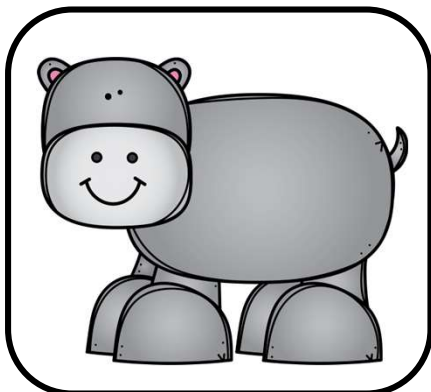
## Key brain structures in the stress response

Our brain is powerful! It contains three key areas that help us think and respond to stress. These include the prefrontal cortex (our thinking part), our amygdala (our safety part), and our hippocampus (our memory part).



Our brain's **prefrontal cortex (PFC)** is located just behind our forehead in the front of our brain. It helps us learn new things, make decisions, focus our attention, and think. We use our PFC to help us solve problems, and it is the "wise owl" of our brain.

The **amygdala** regulates our safety state and is located deep within the brain. It is a pair of almond-shaped structures that function to protect us from threats by responding to fear, anxiety, and danger. Our amygdala protects us by activating our flight, fight, freeze (FFF) response, much like a tiger running quickly. This FFF response prevents incoming information from getting to the thinking and reasoning part of the brain – our prefrontal cortex.

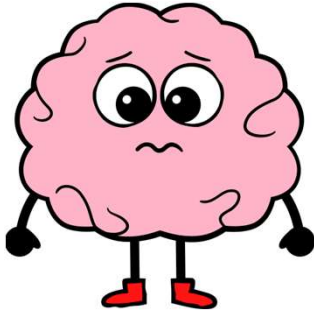


The **hippocampus** helps us form new memories and is part of our information storage and processing center within the brain. It converts short-term memories into long-term memories. We can think of a hippopotamus for this brain structure.



# THE STRESSED BRAIN

Understand the fight, flight, freeze response

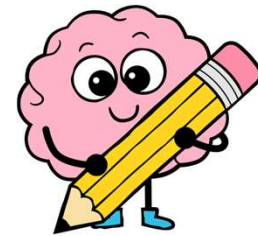


All people have some stress levels—it is a natural part of being human. Stress is our response to a challenge caused by a thought or event that makes us feel nervous or threatened. Our brains are wired to detect danger. A threat causes our brain and body to trigger a “fight, flight, freeze” (FFF) response. The FFF is our body’s stress mechanism in response to danger and threat. This helps us avoid danger and stay safe.

Sometimes, however, our brains can trigger a “false” alarm to stress. Think about a big test coming up. A test can be a big deal, but it is likely not placing us in real physical danger. Consider how our brain responds to this upcoming test. Our body may react by tensing our muscles, clenching our teeth, fisting our hands, or sweating. We may get a headache and have “butterflies” in our stomachs. This is our body’s way of responding to protect us. When our body responds to a real or perceived (“false”) threat, our brains signal to our organs within moments. Practicing mindfulness helps us learn to calm our sense of fear and anxiety – both real and imagined!

## QUIZ YOURSELF:

Mark whether the situation is a real or a “false” threat.



SITUATION: Read each situation and mark it as a real or “false” threat.	REAL THREAT	FALSE THREAT
1. You are waiting to ride a roller-coaster		
2. You must give a speech.		
3. You break your arm.		
4. You are late for class.		
5. You jump back from the edge of a sidewalk to miss being hit by a bicyclist.		
6. You watch a scary movie that frightens you.		
7. You barely miss colliding with another snowboarder on the ski slopes.		
8. Your mom gets angry at you for not completing your assigned chores.		

