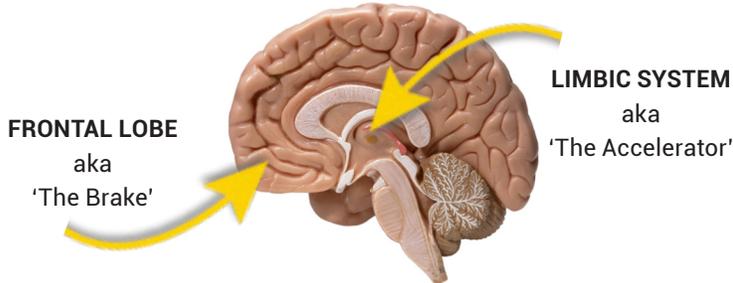


About the Brain & Risky Behavior Definitions & Discussion Questions



Fully Formed Accelerator, Partial Brakes

The Limbic System, otherwise known as the brain's accelerator, is the emotionally charged reward-seeking part of our brain that fully develops by about age 11-12. The Frontal Lobe, otherwise known as the brain's brake, serves as the rational-thinking, impulse-controlling part of our brain. It is slower to develop than the accelerator, though it finally catches up to reach maturity by about age 25! So, the average 16 year old may only have about 45 to 50 percent of the impulse control of an adult. This is why teens may engage in risky behavior even though they know it is unhealthy.

The Brakes: Executive Function Skills

The Frontal Lobe is where mental processes known as Executive Function (EF) skills develop. These help youth plan, organize, control their impulses, and demonstrate empathy toward others. The lower level EF skills are the first to appear, then the higher level skills grow as the Frontal Lobe develops in later years.

Lower Level EF Skills

- Task Initiation
- Flexible Thinking
- Planning
- Prioritizing
- Organizing
- Working Memory
- Self-monitoring
- Selective Attention
- Coordination



Higher Level EF Skills

- Abstract Thinking
- Impulse Control
- Decision-making
- Problem-solving
- Emotion Regulation
- Frustration Tolerance
- Good Judgment
- Empathy

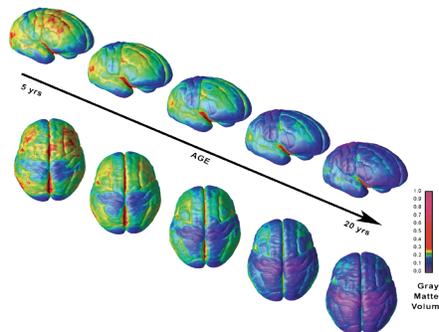
Critical Thinking Section

Students:

- Rate your lower and higher level Executive Function skills on a scale from 1-10. Which skills are you good at? Which skills could you improve?
- Why do you think the Limbic System develops first, before the Frontal Lobe?
- Who do you know that has more mature Frontal Lobe skills than others?
- How does your Limbic System tempt you to engage in risky behavior?
- How can the Use It or Lose It Principle work to your advantage? How can it work to your disadvantage?
- Which Executive Function skills are most important for steering clear of high-risk behavior?

USE IT OR LOSE IT PRINCIPLE:

The picture below is from a study which tracked healthy brain development over time using functional MRI pictures. It shows how the brain loses neurons (darker colors) as we age to make room for more connections all based on the Use It or Lose It Principle. In the Frontal Lobe, the cells being used stay behind to make long pathways of connected neurons for Executive Function skills.



Staff & Family:

- What Executive Function skills do you see youth use less than in previous generations? How does this affect them?
- What EF skills are you a good role model for?
- What high-risk behavior do you see youth engage in today? How much do you think brain development plays a part?
- How can you utilize the Use It or Lose It Principle to help youth improve Executive Function skills?
- How could you integrate EF skills training into your daily teaching and parenting language?