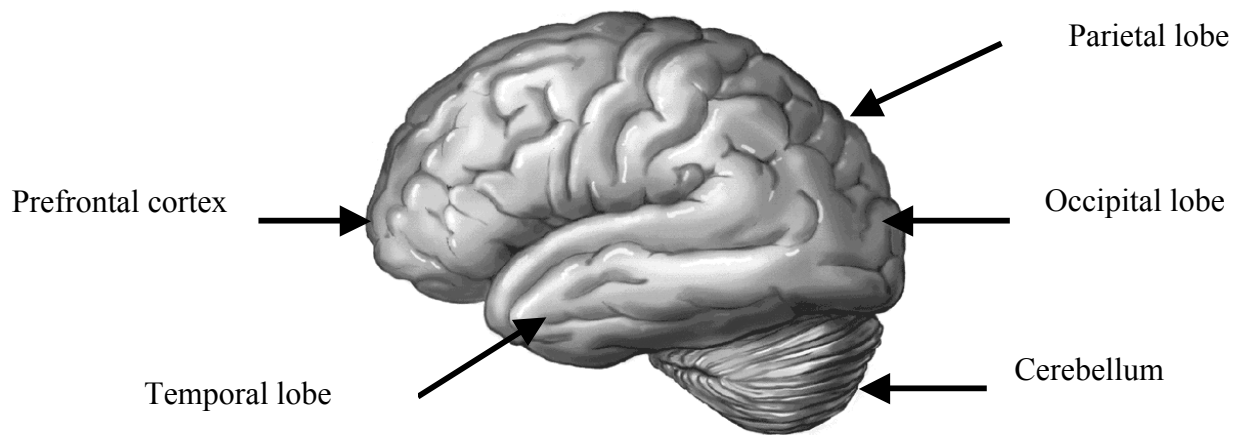


# KNOW YOUR BRAIN

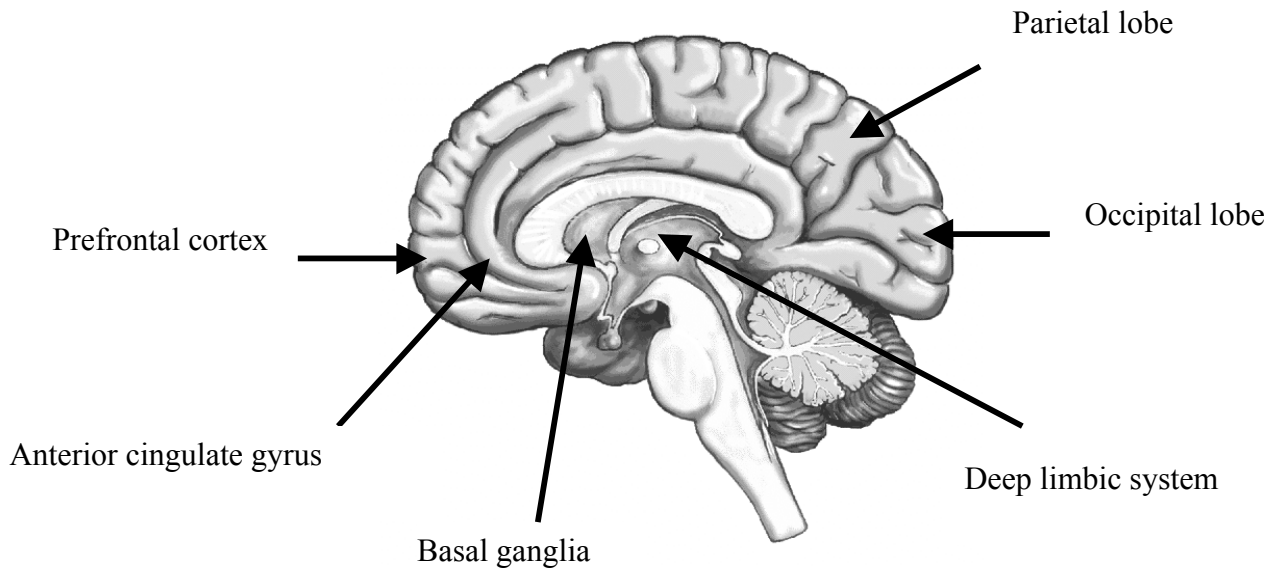
## *One Size Does Not Fit Everyone — Targeted Interventions Just For You*

One prescription does not fit everyone. This is why so many programs designed to improve student, teacher, or administrator performance don't work. All of us need individualized or personalized prescriptions based on our own brain types and needs. First, it is important to become familiar with the brain systems that play a major role in your ability to be the best teacher, administrator, or student you can be.

### Outside View of the Brain

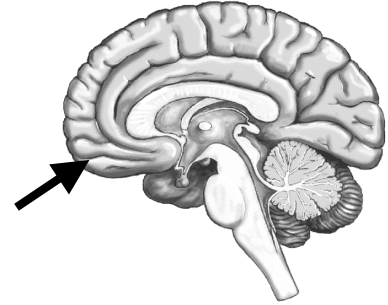


### Inside View of the Brain



## **Prefrontal Cortex (PFC)**

Think of the PFC as the CEO of your brain. Situated at the front third of your brain, it acts like a supervisor for the rest of your brain and body. It is the brain's brake that helps you think about what you say and do before you say or do it. It is involved with attention, judgment, planning, impulse control, follow through, and empathy.



- The PFC helps teachers plan lessons effectively and finish projects on time.
- The PFC makes you think twice before you say something hurtful to a student, parent, or coworker.
- The PFC helps students pay attention to teachers and helps teachers listen to students.
- The PFC helps students complete arrive to class on time and complete homework assignments on time.

### **When the PFC is low in activity, often due to low levels of the neurotransmitter dopamine or brain trauma, people often struggle with:**

Impulse control problems	Short attention span
Distractibility	Decreased forethought
Lack of clear focus or goals	Decreased judgment
Procrastination	Disorganization
Disinhibited	Financial problems
Impulsive overeating	

### **Having low PFC activity may have some positive traits, such as:**

Spontaneous	Creative
Not rule bound	Uninhibited free spirit
Can be a great salesperson (as long as you have an assistant who keeps you organized)	

### **Some conditions associated with low PFC activity include:**

ADHD	Some forms of depression
Brain Trauma	

### **Common treatments used when the PFC is low:**

Organizational help	Intense aerobic exercise
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For ADHD:

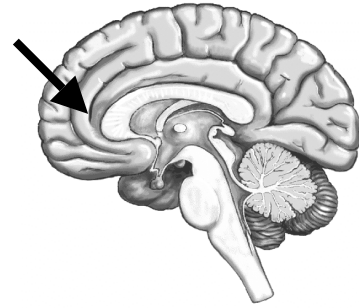
Supplements such as Dr. Amen's Focus and Energy Solution or his ADD Solution  
Medications such as Adderall, Ritalin, or Strattera

For Depression

Supplements such as Dr. Amen's SAME Mood Solution  
Medications such as Wellbutrin

## Anterior Cingulate Gyrus (ACG)

I like to call the ACG the brain's gear shifter. It runs lengthwise through the deep parts of the frontal lobes and allows us to shift our attention and be flexible and adaptable and to change when needed.



- The ACG allows you to shift directions when the State hands down new curriculum requirements.
- A healthy ACG helps everyone at school go with the flow so you have less stress.
- The ACG helps teachers and students shift their attention from one class to the next throughout the school day.
- Your ACG helps you see options when faced with obstacles.

### **When the ACG is high in activity, often due to low levels of the neurotransmitter serotonin, people often struggle with:**

Trouble shifting their attention

Get stuck on negative thoughts or actions

Tendency to worry

Hold grudges against loved ones/coworkers

Argumentative with family members

Oppose new ideas/strategies at work

Obsessive thoughts

Compulsive behaviors

Compulsive overeating

### **Having high ACG activity may have some positive traits, such as:**

Very focused

Stay on track

Goal-oriented

Predictable

Very organized

Can be a great accountant or number-cruncher

### **Some medical conditions associated with high ACG activity include:**

Obsessive compulsive disorder

Anxiety disorders, get stuck on negative thoughts

PMS

Eating Disorders, such as compulsive overeating

Chronic pain

Posttraumatic stress disorder

### **Common treatments used when the ACG is high:**

Distraction, paradox, options

Intense aerobic exercise

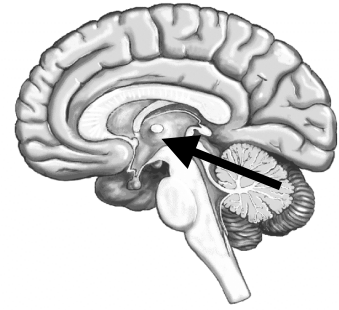
Boost serotonin:

Supplements such as Dr. Amen's Serotonin Mood Solution

Medications such as SSRIs (Prozac, Zoloft, Lexapro, etc.)

## Deep Limbic System (DLS)

Lying near the center of the brain, the deep limbic system is involved in setting a person's emotional tone. When the activity in this area is normal, people tend to be more positive and hopeful.



- The DLS increases your motivation to succeed in school.
- A healthy DLS promotes stable moods that help keep classrooms calm.
- When the DLS works right, it makes it easier for teachers to bond with their students.

**When the DLS is high in activity, often due to low levels of different neurotransmitters, such as serotonin, dopamine or norepinephrine, people often struggle with:**

Negativity	Lowered motivation and drive
Decreased self-esteem	Mood disorders, such as depression
Sadness	Lack of energy
Trouble sleeping	Appetite changes
Guilt	Feelings of hopelessness or worthlessness
SAD overeating	

**Having high DLS activity may have some positive traits, such as:**

More in touch with feelings	Increased empathy for people who suffer
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**Some medical conditions associated with high DLS activity include:**

Depression	Dysthymia (chronic, mild depression)
Cyclic mood disorders	Pain syndromes

**Common treatments used when the DLS is high:**

Learning to kill the ANTs	Intense aerobic exercise
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For Depression

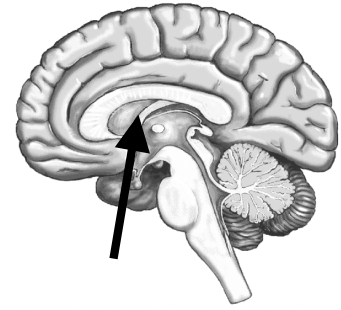
Supplements such as Dr. Amen's SAME Mood Solution  
Medications such as Wellbutrin

For Pain

Supplements such as fish oil plus Dr. Amen's SAME Mood Solution

## Basal Ganglia (BG)

Surrounding the deep limbic system, the basal ganglia are involved with integrating thoughts, feelings, and movements. This part of the brain is also involved in setting a person's anxiety level. This area is also involved with feelings of pleasure and ecstasy. Cocaine works in this part of the brain. Cookies, cakes, and other treats also activate this area, according to a fascinating new book called *The End of Overeating* by Dr. David Kessler, the former commissioner of the U.S. Food and Drug Administration.



- With normal activity in this area, you can handle extra pressure at school without getting completely stressed out.
- When the basal ganglia are well-balanced, it helps keep you from worrying excessively about your homework.
- Teachers who have normal activity here are better able to keep calm in the classroom.
- A healthy basal ganglia can help keep you from bingeing on sweets or abusing alcohol or drugs to calm yourself down.

### **When the BG is high in activity, often due to low levels of the neurotransmitter GABA, people often struggle with:**

Anxiety	Excessive stress
Panic	Conflict avoidant
Physical stress symptoms, such as headaches, stomachaches	Muscle tension
Predicting the worst	Nervousness
	Anxious overeating

### **Having high BG activity may have some positive traits, such as:**

Increased motivation	Ability/desire to work for long periods
Conscientious	Self-discipline

### **Some medical conditions associated with high BG activity include:**

Anxiety disorders  
Physical stress disorders, such as headaches or GI problems

### **Common treatments used when the BG are too high:**

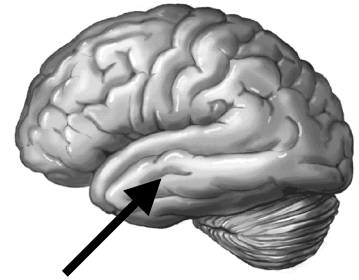
Learning to kill the ANTs	Intense aerobic exercise
Body biofeedback	Hypnosis, meditation
Relaxing music	Assertiveness training
Limit caffeine/alcohol	

### **For Anxiety**

Supplements such as Dr. Amen's GABA Calming Solution  
Medications such as BuSpar or Neurontin

## Temporal Lobes (TLs)

The temporal lobes, located underneath your temples and behind your eyes, are involved with language, memory, mood stability, and temper issues. They are part of the brain's "What Pathway," because they help you recognize and name "what" things are. Temporal lobe problems can lead to angry outbursts and confrontations. Abnormal activity in this area can also make it difficult for you to learn new things or remember important things, like your wedding anniversary or when to take your supplements or medication — these can be detrimental to your relationships and health.



- The temporal lobes help you read social cues, such as understanding when it is or isn't a good time to approach the principal to discuss a promotion.
- When the temporal lobes work right, it keeps you from yelling and screaming at your students when you get frustrated.
- This area of the brain helps students with listening and reading.
- The temporal lobes help you remember all the things you need to do to stay healthy.

### **When the TLs are abnormal in activity, often due to low levels of the neurotransmitters GABA or acetylcholine, people often struggle with:**

Memory problems	Mood instability
Irritability	Temper problems
Anxiety for no clear reason	Dark thoughts
Trouble finding words	Processing problems
Poor reading	Trouble reading social cues

### **Some medical conditions associated with abnormal TL activity include:**

Head injury	Anxiety
Epilepsy	Dementia
Amnesia	

### **Common treatments used when the BG are too high:**

For mood instability and irritability

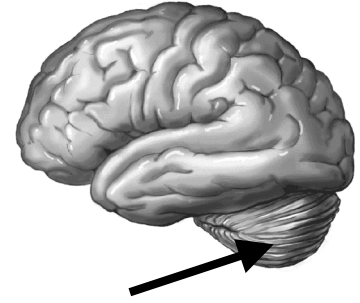
Supplements such as Dr. Amen's GABA Calming Solution  
Medications -- anti-seizure medications such as Neurontin, Depakote or Lamictal

For memory problems

Supplements such as Dr. Amen's Brain and Memory Recovery Solution  
Medications such as memory enhancers Aricept or Namenda

## Cerebellum (CB)

The cerebellum, at the back bottom part of the brain, is called the little brain. Even though it represents only 10 percent of the brain's volume, it houses 50 percent of the brain's neurons. It is usually the most active part of the brain and is usually symmetrical in appearance. The cerebellum is involved with motor coordination, posture, and how we walk. It is also involved with processing speed, like clock speed on a computer. It is also involved with thought coordination, or how quickly you can make cognitive and emotional adjustments.



- A healthy cerebellum is one of the keys to being a good problem-solver.
- When working optimally, the cerebellum improves athletic performance.
- The cerebellum helps you think quickly, which facilitates test-taking.
- Relationships are generally smoother with good activity in the cerebellum.

### **When the CB is low in activity people often struggle with:**

Poor physical coordination	Disorganization
Poor judgment	Slowed thinking
Impulsivity	Trouble learning

### **Common treatments used when the CB is low in activity:**

Coordination exercises, such as dancing, table tennis	Video game Dance Dance Revolution Interactive Metronome
Brain Gym Exercises	

There are no clear supplements or medications known to enhance cerebellar activity.

### ***BRIEF BRAIN SYSTEM SUMMARY***

- *Prefrontal cortex – judgment, forethought, planning, and impulse control*
- *Anterior cingulate gyrus – shifting attention*
- *Deep limbic system – sets emotional tone, involved with mood and bonding*
- *Basal ganglia – integrates thoughts, feelings, and movements, involved with pleasure*
- *Temporal lobes – memory, mood stability, and temper issues, “what pathway”*
- *Cerebellum – motor coordination, thought coordination, processing speed and judgment*