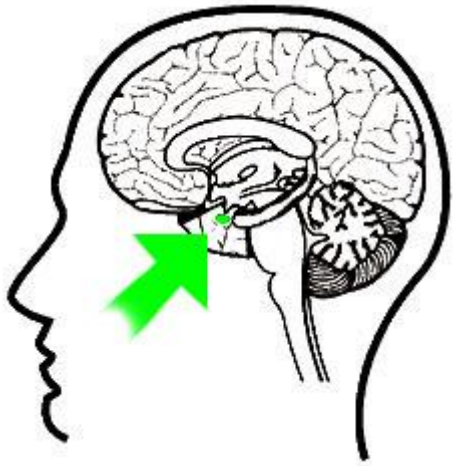
Under Construction

The Teenage Brain

Too Dependent on the Amygdala

- Teens process emotions differently from adults
- Use the amygdala (emotion center) more than the frontal lobe



This can cause teens to misread emotions

Try this test to see how you interpret emotions

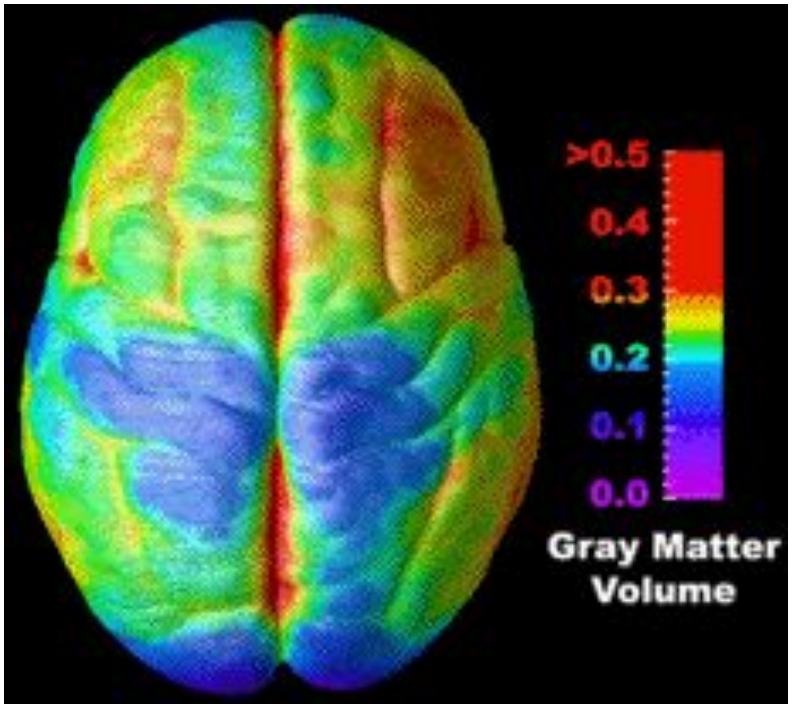
Too Dependent on the Amygdala

- What does this mean for teens?
- What problems can this cause for teens as they relate to their friends?
- What problems can this cause for teens as they relate to adults?
- What are some consequences that can occur due this facts?

The Brain Matures from Back to Front

The brain continues to change into the early 20's

The frontal lobes, responsible for reasoning and problem solving, develop last.

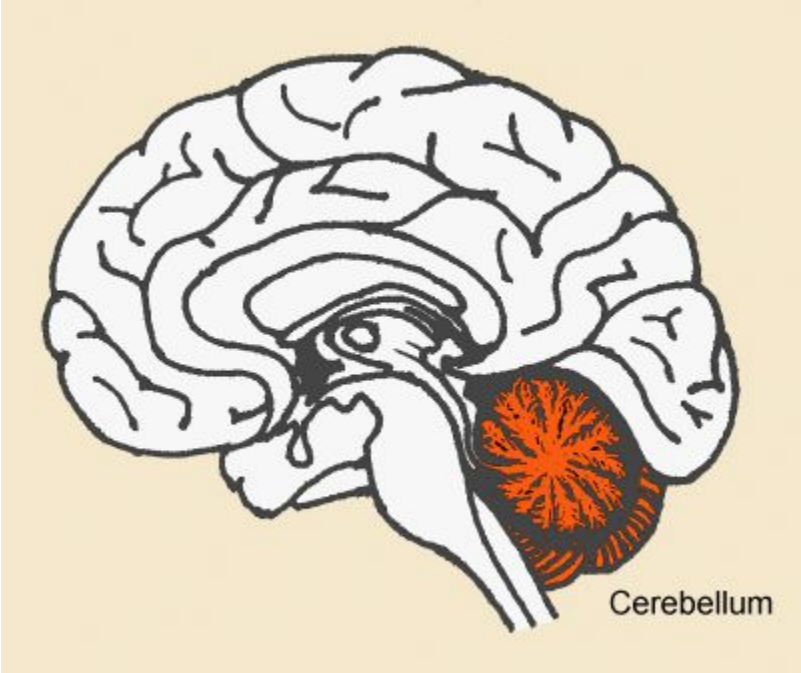


The Brain Matures from Back to Front

- What type of tasks may be more difficult for teens than for adults?
- Are there things that adults ask teens to do that their brain may not be ready to do?
- Are there things that teachers ask teens to do that their brain may not be ready to do?

Tremendous Growth in the Cerebellum During the Teen Years

- Cerebellum is responsible for coordination
- May explain periods of clumsiness and lack of physical coordination



Teens are Novelty-Seeking

- Prefrontal cortex controls novelty seeking and natural curiosity impulse.
- Teens are motivated by risky and new experiences
- Teens often seek new and risky experiences without thinking about the consequences

Teens are Novelty-Seeking

- What does this mean for teens?
- What are some consequences that can occur due this facts?

Prefrontal lobe allows you to delay gratification

- Receiving a reward increases the neurotransmitter dopamine.
- Increase dopamine, increase pleasure
- Prefrontal cortex helps control reward-pleasure connection. Helps to delay gratification
- Dopamine levels are high in teens.

- Many drugs like alcohol and nicotine have a tremendous effect on the reward/pleasure systems in the teenage brain.
- Much easier for teens to become addicted to these drugs
- Much harder for teens to overcome these additions

The Marshmallow Experiment

- Research shows that people who can delay gratification do better in school.
- Practicing delaying gratification increase your ability to do so

Prefrontal lobe allows you to delay gratification

- What does this mean for teens?

- What are some consequences that can occur when gratification is not delayed?
- Can you give an example from your life of a negative consequence from not delaying gratification

Use or Lose

- During early teen years an excess of synapses form
- Leaning is helped by pruning away synapses that are not used
- Myelin is wrapped around other synapses that are used – increasing connection
- Connections that are used are strengthened
- Connections that are not used are lost

Use of Lose

- What synapses do you want to keep?
- What activities will help you retain the synapses that are need in life?

A Visual Review of the Changes

Visit this site for a visual display of the changes in a teen's brain