The Adolescent Brain

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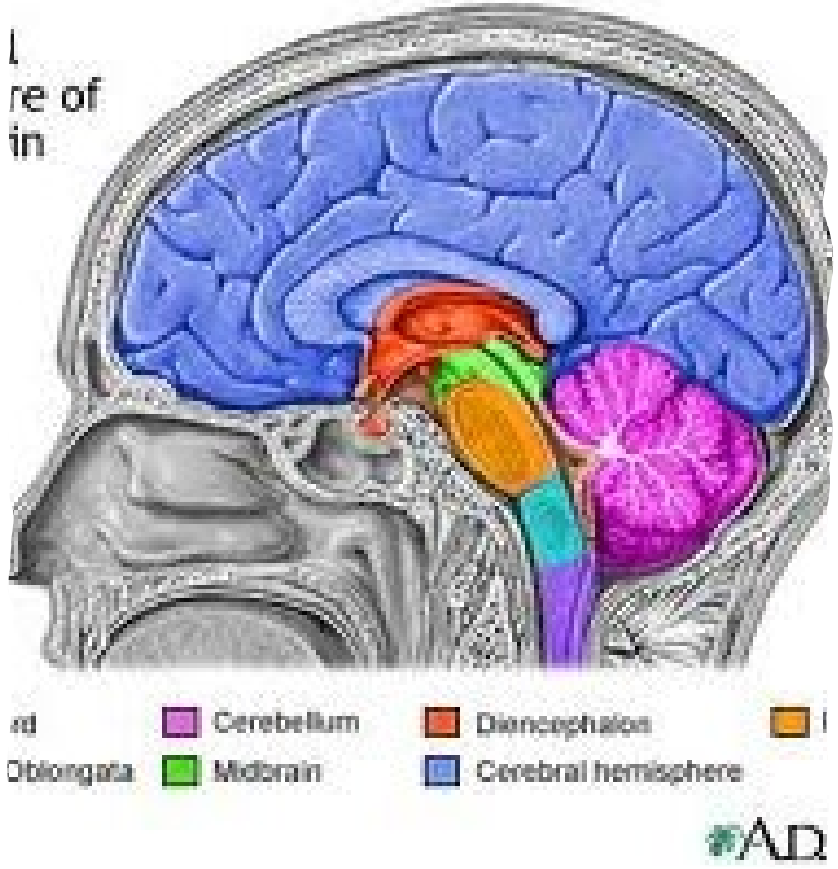
In the chat:

Type one word to describe yourself during your teenage years

1. What was important to you as a teenager?
2. How important are those things to you today?

The Brain!



Brain Stem

- -Basic regulatory functions
- -Automatic functions

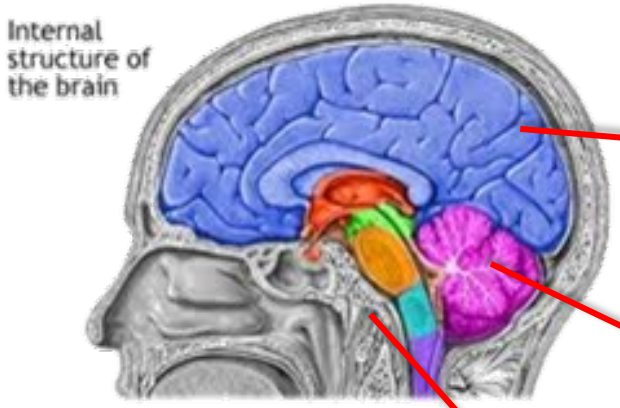
Limbic System

- -Behavioral & emotional responses
  -Fight, flight, & freeze
- -Links brain stem to cortex

Cortex

- -Behavioral & emotional control
- -Planning
- -Assessing risks
- -Perspective-taking

The Brain's Three Step Process



REASON
(Cortex)

RELATE
(Limbic Region)

REGULATE
(Mid-Brain/Brainstem)

Implication: **Need to be regulated before being able to take the other person's perspective and problem-solve**

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A Work in Progress:
The *(Impulsive)* Teenage Brain

Fundamental reorganization of the brain begins that continues in to 20's

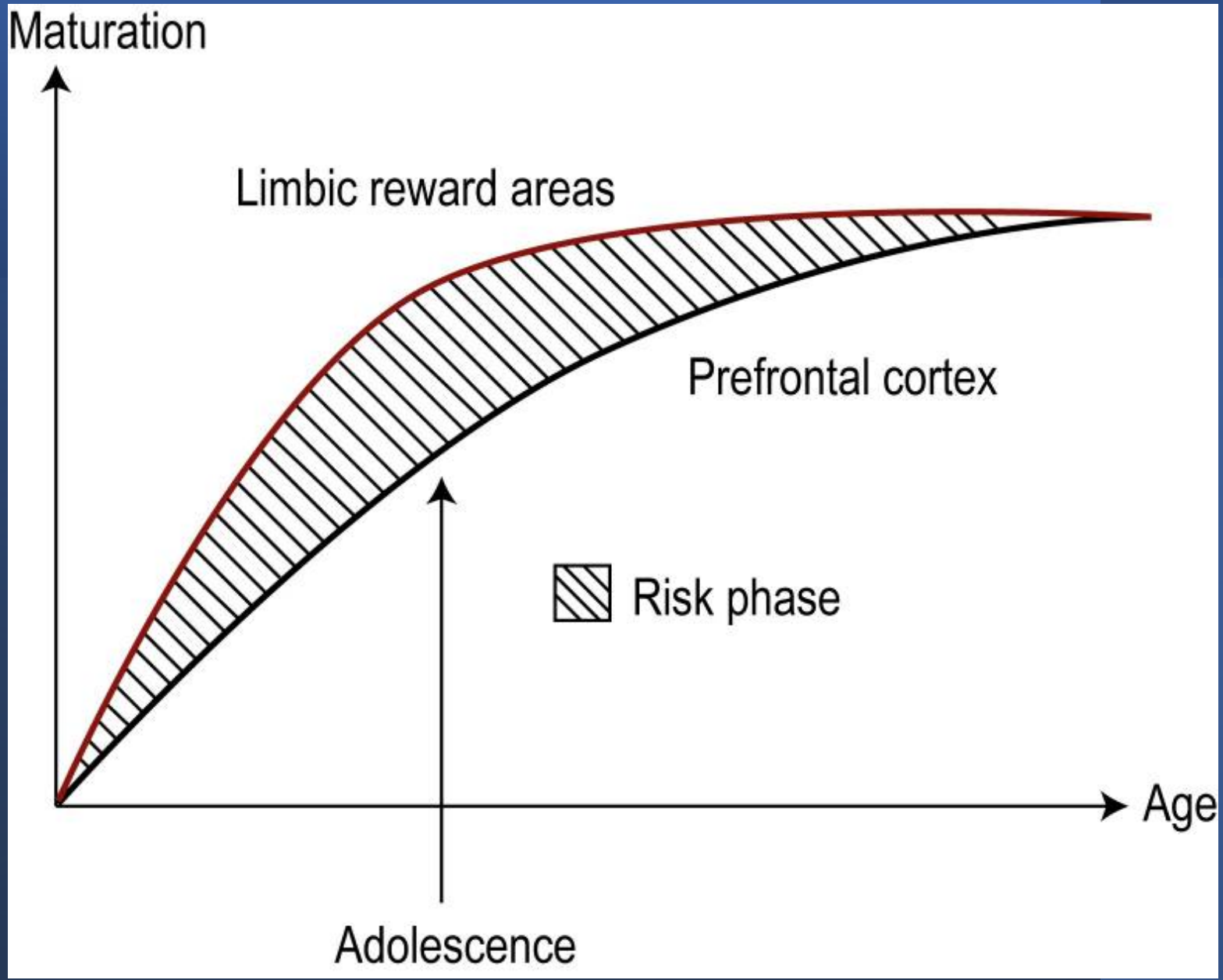
Limbic and reward systems more developed than prefrontal cortex ("air traffic control tower")

As a result, there is an **imbalance** that leads to the emotional reactive style of adolescents and may promote risky behavior

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3705203/

“Using such tools as functional magnetic resonance imaging (fMRI) and positron emission tomography (PET), scientists have peered into teen brains and found that typically, until a person hits his early to mid-20s, [their] prefrontal cortex is still rapidly changing. So are the cell endings and chemical connections that link the cortex to parts of the brain associated with gut impulses.”

https://www.washingtonpost.com/national/health-science/risky-behavior-by-teens-can-be-explained-in-part-by-how-their-brains-change/2014/08/29/28405df0-27d2-11e4-8593-da634b334390_story.html



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A Work in Progress: The Teenage Brain

Developmentally, adolescents develop autonomy and identity beyond their primary family

Peer groups become more central

As a result, adolescents are more susceptible to outside influences (ex. positive OR negative peer influences)

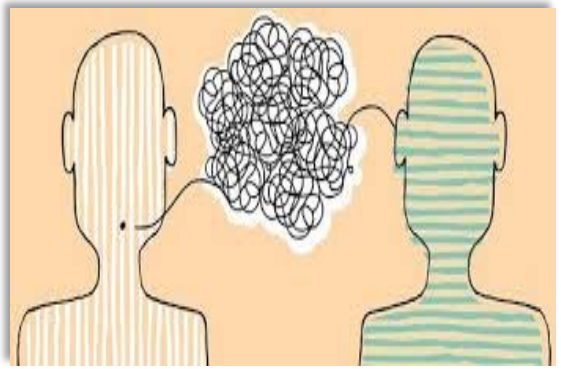
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3705203/

Have you ever…

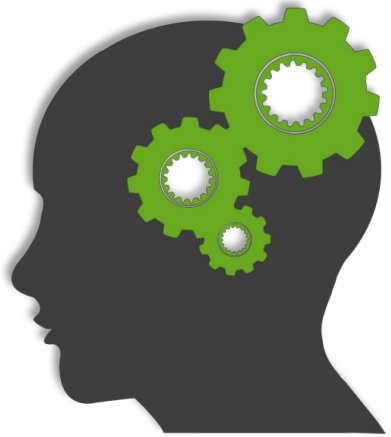
- felt like you couldn't find the right words to say what you're thinking or feeling?
- misunderstood a family member that led to disagreement
- did something impulsively, without thinking, that offended someone
- become so annoyed with someone that you snapped at them?
- been so anxious about a project that you procrastinated for as long as possible?
- thought you were being criticized by a boss and later realized you were being defensive and combative?

At 15, a teenager who looks like an adult is still 10 years away from a fully developed prefrontal cortex!

Research on Skills Deficits



Language & Communication



Attention/Working Memory

Emotion & Self-Regulation

Cognitive Flexibility

Social Thinking

Emotion-Regulation & Self-Regulation Skills

Help children to:

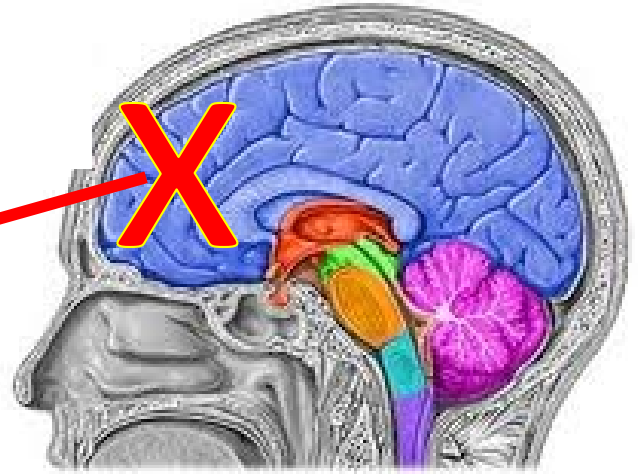
- Handle anger, frustration, annoyance, anxiety, disappointment
- Wait for something they want
- Think about about what might happen before doing something
- Be energetic or calm at the right times

When these skills are lagging:

- Goes from 0 to 60 very quickly
- Chronic grouchiness, irritability, fatigue, anxiety…
- Impulsive
- Sluggish or hyper

Emotion-Regulation Skills

When frustrated, we lose access to the "smart" thinking part of the brain…



…so the lower parts of the brain are left in charge.

Result:

Intense emotion, impulsive reactions, rigid responses, and lack of consideration for others' points of view.

Flipping the Lid

- **Reactive**: Lid is flipped – cortex offline

- **Proactive**: Lid is on – cortex online

Cognitive Flexibility Skills

Help children to:

- Handle changing from one activity to another
- See shades of gray
- Imagine what could happen in the future
- Handle changes to routines, rules, or new situations
- Change their mind

When these skills are lagging:

- Black and white thinking
- Difficulty generalizing
- Get stuck on things
- “Inflexible”

Cognitive Flexibility Skills

Help children to:

Avoid…

- Taking things too personally
- Exaggerating
- Thinking things are worse than they are

When these skills are lagging

You might hear:

- "I'm stupid"
- "Things will never work out for me"
- "It's not fair"
- "Nobody likes me"
- "People are out to get me"
- "The only way to maintain one's self-respect is through fighting"

Social Thinking Skills

Help children to:

- Understand what people mean
- Start conversations and get attention positively
- Understand how they make other people feel and what others think of them
- Understand other people's points of view

When these skills are lagging:

- Socially awkward
- Lack of awareness
- Trouble making or keeping friends
- Surprised by other people's reactions to them

The Good News

Just like intelligence…

…thinking skills can develop and strengthen over time (with the right interventions)

The role of stress on the brain

Stress *"stresses"* skills

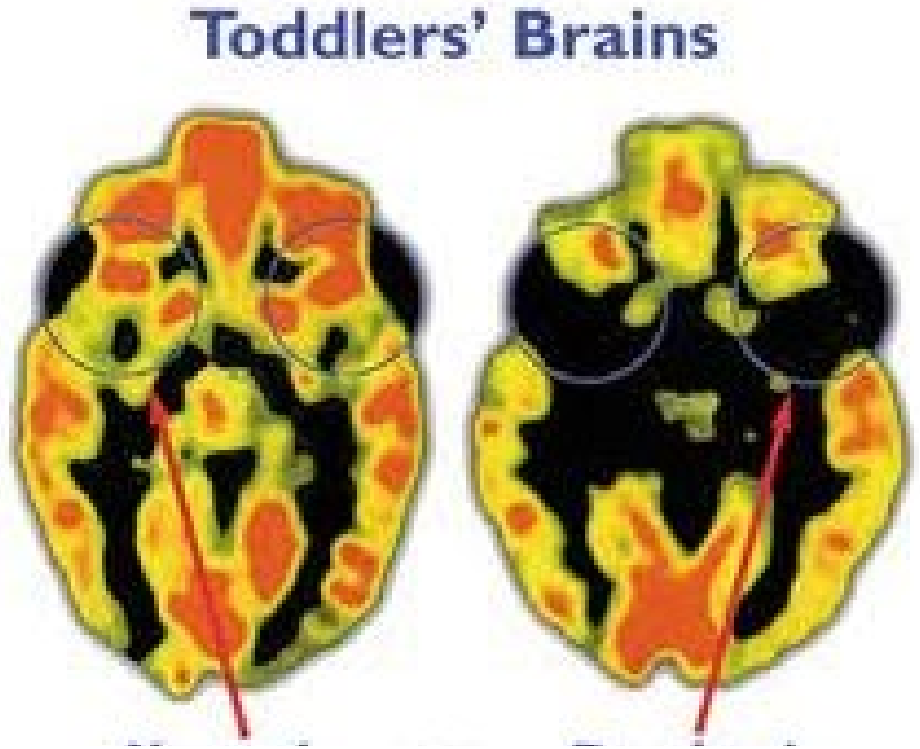
And impacts:

- Skill development
- Skill access

CHRONIC STRESS/TRAUMA

Acute Trauma	Chronic Trauma or Toxic Stress
▪ Sexual assault ▪ Witnessing a shooting ▪ Car accident ▪ Natural disaster	▪ Ongoing abuse & neglect ▪ Domestic violence ▪ Poverty ▪ Racism ▪ Chronic family conflict ▪ Punitive disciplinary practices

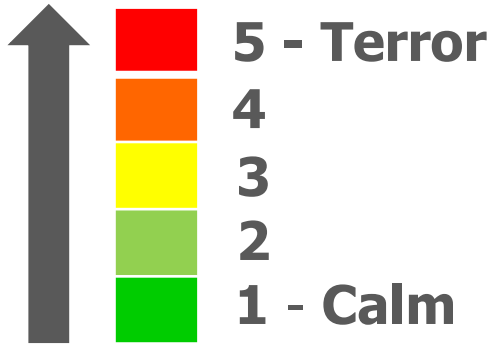
What causes lagging thinking skills?



Chronic, overwhelming stress, adversity or trauma arrests brain development which manifests itself as lagging skills

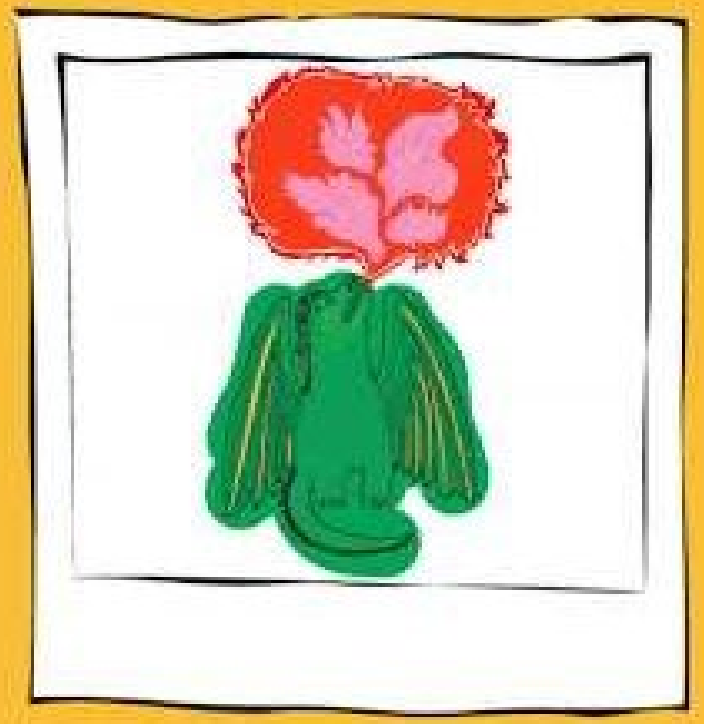
Threat Response

Mental State



Cognition

Adapted from Child Trauma Academy
Bruce Perry, MD



TRAUMA AND THE BRAIN

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Implications for Mediation

Implications: Mediation Structure

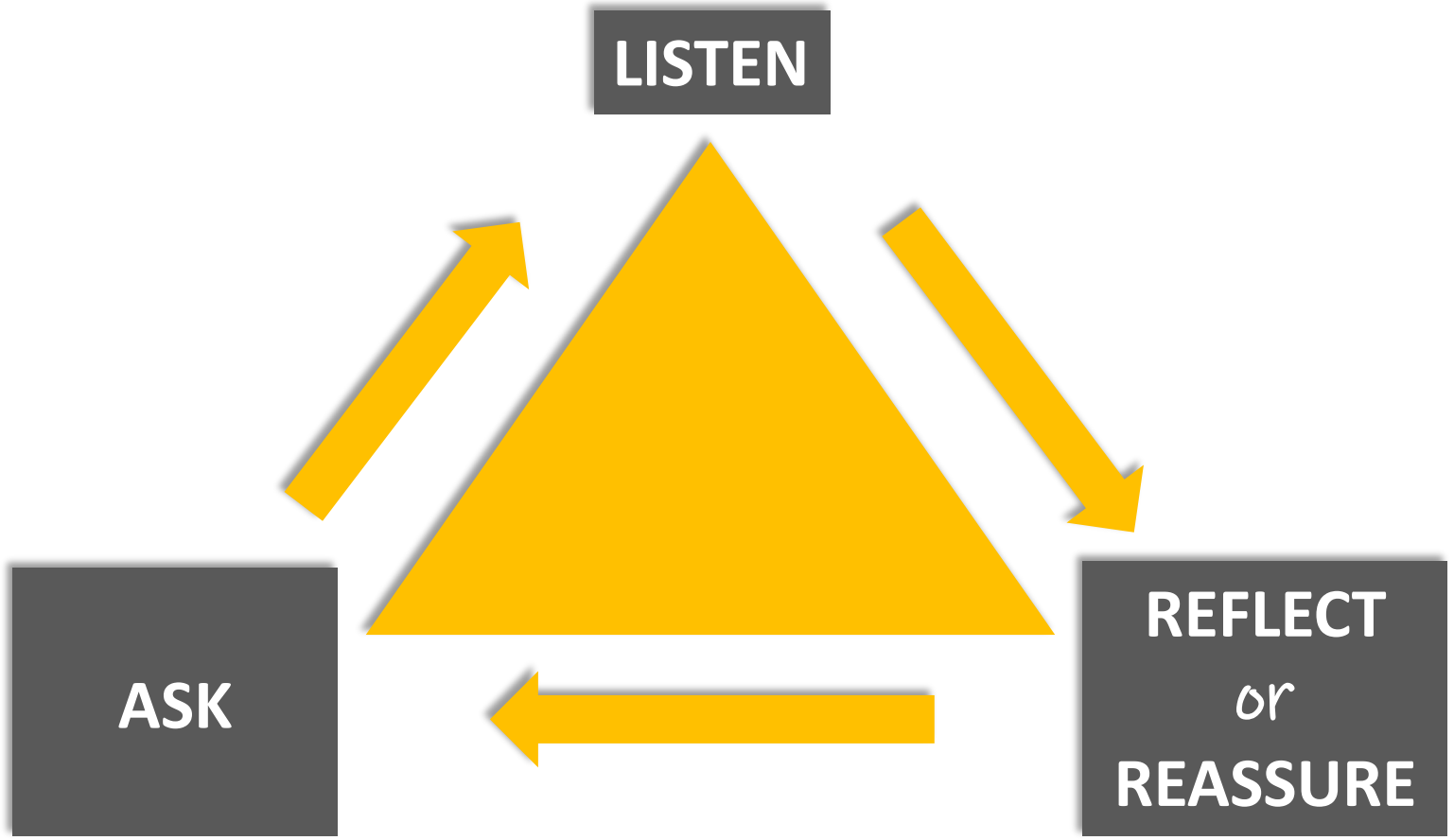
- Mediator's opening
- Pre-mediation sessions
- Caucusing

Implications: Mediation Facilitation

- Reflective listening
- Encouragement/Reassurance
- Clarifying questions
- Yes/And
- Paying attention to the “lid”
- Breaks
- What else?

Combining the Tools

Example: *Listening Triangle*



What are other implications of adolescent neurobiology for successful mediation?