


Making Sense
of Brain
Development
in Children
and
Emerging
Adults

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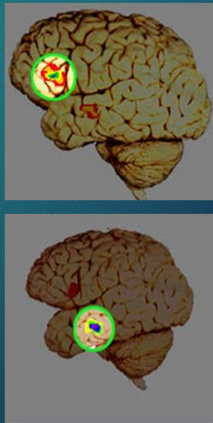
Emotional Recognition



- What emotion is the person experiencing?
- Happiness, anger, fear, sadness, confusion?

Emotional Recognition


- Teens (11-17)
- MRI - Response to photo
 - Prefrontal less active than adults
 - Lower brain more active than adults



Yurgelun-Todd

Emotional Recognition

- Stimulated Brain Activity
 - Frontal lobe - Logical thinking
 - Mid-brain - Emotion, gut driven



Emotional Recognition

Reading Emotion

- All adults responded correctly - Fear
- 1/2 of teens responded correctly

Combined Effect

- Reads emotional situation incorrectly
- Responds to misinterpreted emotion in an emotional way

Brain Development

Brain is more elastic/flexible than previously considered

Growth continues beyond the early childhood years

Brain matures not by growing but by increasing connections and specialization

3 Areas of Development

Physiological

- Sustaining Life

Emotional

- Sex
- Aggression
- Attachment

Cognitive

- Executive Functioning
- Develops into the 20s

Growth and Pruning

1st growth spurt

In Utero to 18 months

2nd growth spurt

10-13 years of age

Followed by pruning and organizing of neural pathways

Development in Emerging Adults

- Brain development extends into the young adult years - 18-23
- Most development occurs in the Frontal Lobe
 - Executive functions
 - Planning
 - Reasoning
 - Impulse Control



POLL

What Were They Thinking



Executive Functioning


Working memory and recall

- holding facts in mind while manipulating information
- accessing facts stored in long-term memory

Activation, arousal, and effort


- getting started
- paying attention
- finishing work

Executive Functioning




Controlling emotions

ability to tolerate frustration
thinking before acting or speaking



Internalizing language

using "self-talk" to control one's behavior and direct future actions



Complex problem solving

taking an issue apart
analyzing the pieces
reconstituting and organizing it into new ideas


Challenges to Executive Functioning


Difficulty planning a project

Trouble comprehending how much time a project will take to complete

Struggles to tell a story (verbally or in writing)

Challenges in Executive Functioning


 Trouble communicating details in an organized, sequential manner


 Difficulty with memorization and retrieving information from memory

Challenges in Executive Functioning

Trouble initiating activities or tasks, or generating ideas independently

Difficulty retaining information while doing something with it; e.g., remembering a phone number while dialing

Characteristics of Emerging Adult Brain

- More prone to risk taking due to lesser ability to resist impulses
- Underdeveloped ability to take moral responsibility
- Less able to understand/anticipate consequences



Sensitive to Rewards

Focused on Immediate Consequences

Peers, Peers, Peers

Factors Affecting Decision-Making

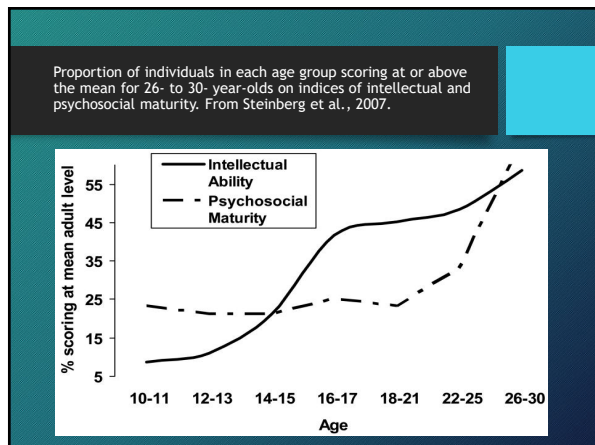
[Peer Influence and Adolescent Behavior \(youtube.com\)](#)



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What Were They Thinking





Factors Affecting Development

- Brain Injury
- Mental Illness
- Substance Use
- Traumatic Experiences

The Biology of Toxic Stress (youtube.com)



Building Connections



Ways to Improve Decision Making

Identify More Than One Solution	Strengthen Emotion Regulation
Reduce Substance Use	What Is In It For Me?
Prosocial Peers and Activities	Adequate Sleep and Diet
Practice Practice Practice	

- Dialectical Behavior Therapy (DBT)
- Trauma-Focused Cognitive Behavior Therapy (TF-CBT)
- Eye Movement Desensitization and Reprocessing (EMDR)
- Trust-Based Relational Intervention (TBRI)

- Cognitive Processing Therapy (CPT)
- Trauma Affect Regulation: Guide For Education and Therapy (TARGET)
- Seeking Safety
- Effective Practices in Community Supervision (EPICS)

Connection Interventions

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