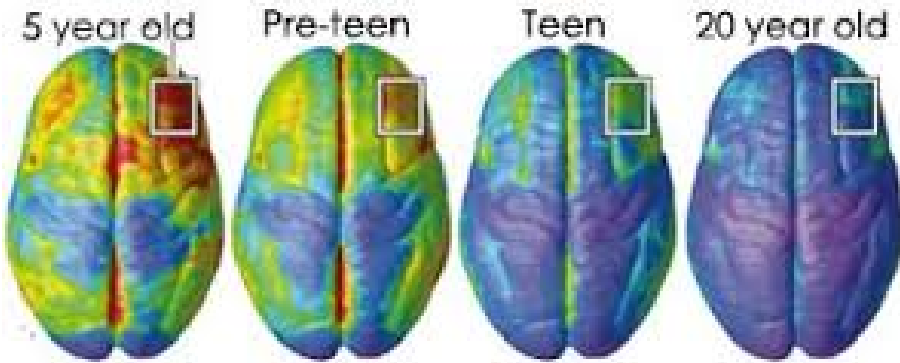
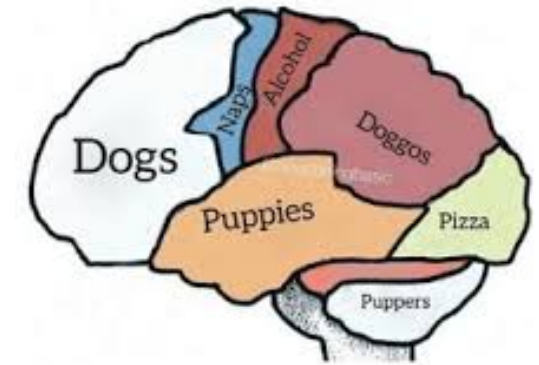




# Young Adult Brain Development

How the human brain works



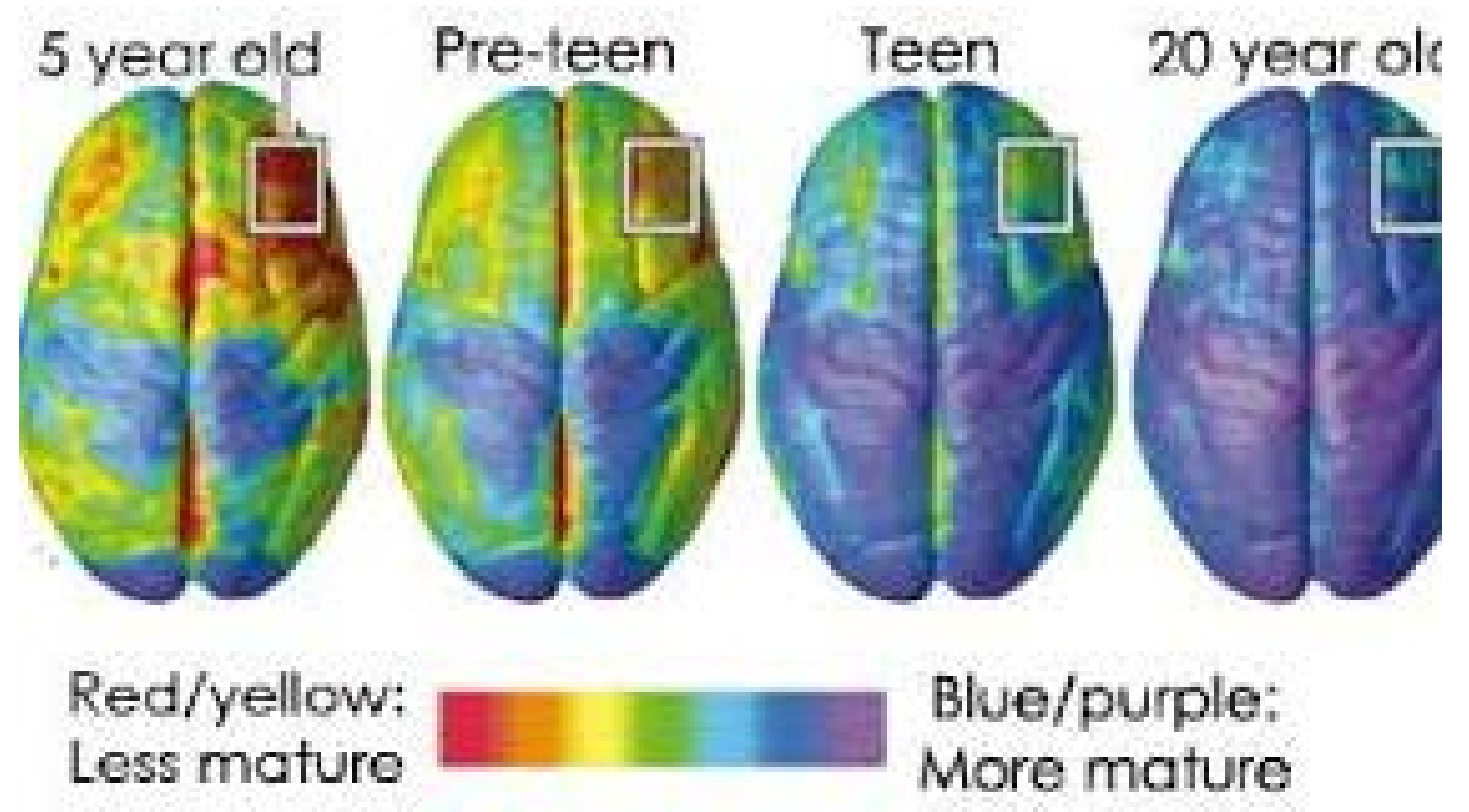
Raphael Mizrahi, B.S.

Red/yellow: Less mature  
Blue/purple: More mature



## Let's start with the basics...

- Brain development almost finished by 20yo
- The only exception...the Pre-Frontal Cortex (PFC)
- The PFC finishes developing around 25yo (or later)



# Basics of the Pre-Frontal Cortex

- The PFC is responsible for the executive functioning of the brain including:
  - Representational knowledge
  - Operational process skills
  - Self-regulation



# Representational Knowledge

- Representational knowledge- Skills that allow a person to learn rules/norms
  - Learning that it is appropriate to shake someone's hand when you meet them
  - Learning to say "hello" when you answer the phone



# Operational Process Skills

- Operational process skills- Skills necessary to plan ahead, stay organized, connect intentions to goals via actions (everything needed to achieve short and long term goals)



# Self-regulation

- As the pre-frontal cortex matures, it recruits/develops more and more brain circuits to resist self-destructive behaviors
- The more brain circuits “plugged into” the pre-frontal cortex, the easier it becomes to resist self-destructive behaviors

*Don't press this button!*



# Back to young adults- the barriers to seeking help...

- Since the PFC is also partly responsible for self-awareness and introspection, a typically developing 18 year old's capacity to be aware of their feelings and behavioral patterns is going to be premature
- In some cases, parents/guardians can notice a young adult's declining mental health and encourage them to seek help but since young adults start gaining independence, they may not have (or want) to rely on others to notice when they are struggling

# Brain Development and Trauma

- Trauma research has found that trauma hinders the brain's ability regulate emotions appropriately
- In some extreme cases of PTSD, it can seem as if the brain's on/off switch is stuck in the on position
- Researchers are beginning to think of this as the brain's primitive survival skills taking over the rest of the brain's ability to function properly in an attempt to survive



**Dont bother,  
the Off switch  
is broken.**



# The prevalence of abuse/trauma in MA

- In 2016, Massachusetts reported the highest rates of child victims in the nation with an estimated 23.3 child victims per 1000 children.
- With the help of new initiatives signed by Gov. Baker, we were able to reduce this rate to an estimated 18.3 victims per 1000 children in 2017 (2017 Child Maltreatment Report from HHS)



The Transitions to Adulthood Center for Research (T-ACR) is a part of the Implementation Science & Practice Advances Research Center (iSPARC)



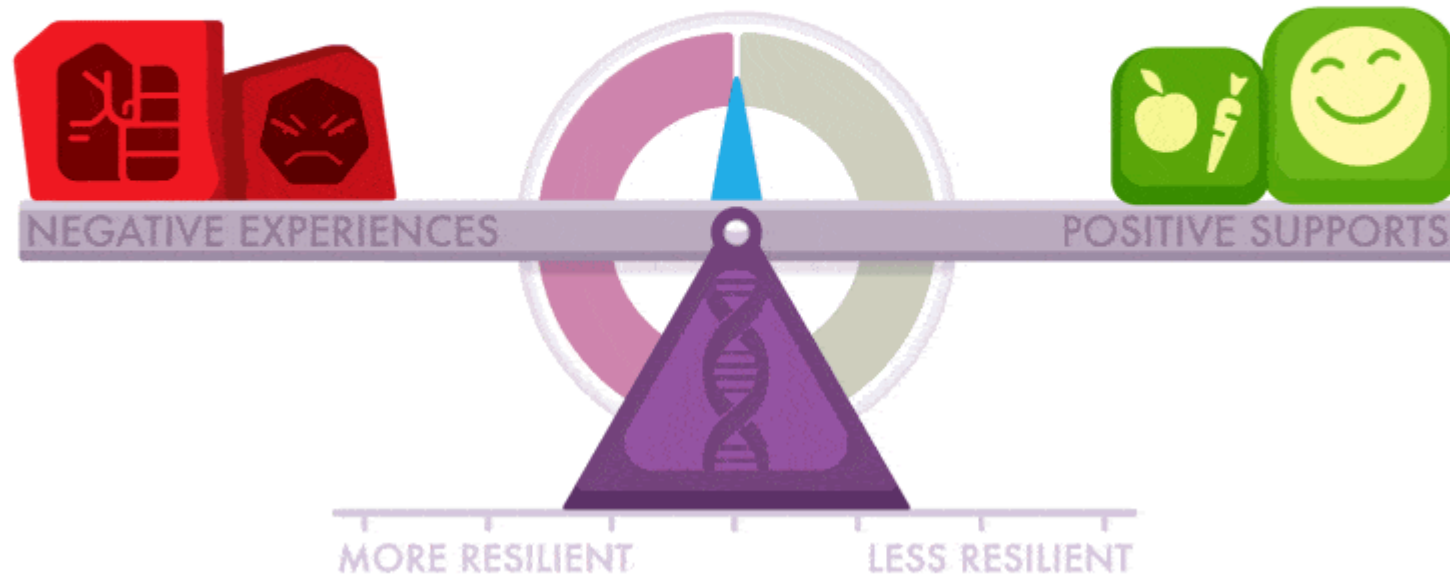
# Structural Racism and it's Consequences

- Racial minorities bear a disproportionate burden of morbidity and mortality (Gee & Ford, 2015)
- Racial discrimination fostered through mutually reinforcing systems of housing, education, employment, earnings, benefits, credit, media, health care, and criminal justice (Bailey, et al. 2017)

# Urban Violence and Trauma- McGill et al. 2014

- Exposure to community/family violence is associated with higher post-traumatic stress symptoms and more school functioning problems
- Males were more likely than females to experience more school functioning problems
- Low level parent education was associated with higher levels of family violence exposure

# Effects of Trauma are Mitigated by Supportive Relationships

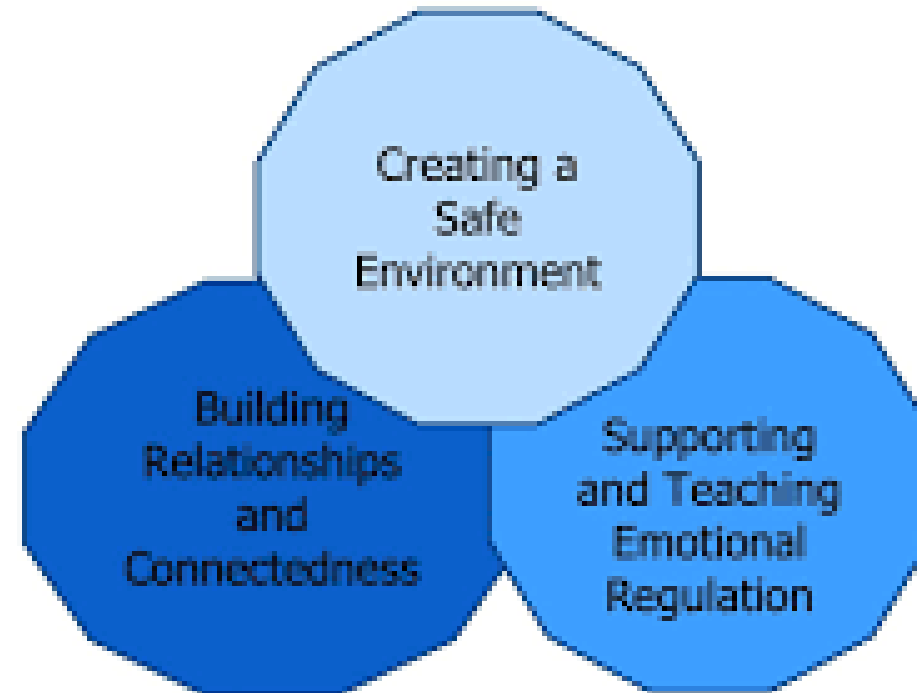


# Brain Development and Trauma

Some things the literature has found:

1. Childhood Emotional Abuse causes dysregulation in the stress response system-children can present as hyporeactive or hyperreactive (Yates, 2007)
2. Young adults should be encouraged to exercise control over their actions and to practice self-organization if they have an abusive past (Panzer, 2008)

## Components of Trauma-Informed Care



# Brain Development and Trauma



3. Childhood abuse and neglect are both associated with diminished cognitive flexibility in adolescents (Spann et al. 2012)



4. Experiencing childhood trauma makes an adolescent more likely to engage in risk-taking behaviors (Kerig, 2019)

(DeGregorio,  
2013)

5. Trauma can lead to:
  - i. Reduced brain size
  - ii. Increased likelihood of mental illness
  - iii. Increased likelihood of experiencing social difficulties
6. Many studies have found social, emotional, and cognitive difficulties in children who have been abused.

(DeGregorio,  
2013)

7. Abused children have deficits in:
  - a) Declarative memory
  - b) Every-day memory
  - c) Language comprehension
  - d) Attention
  - e) Overall executive functioning
  - f) forming relationships with their peers later on in life



(DeGregorio,  
2013)

8. Chronic stress as infants → chronic hyperarousal later in life → difficulty in regulating affect → difficulty in social settings because these individuals may be unable to differentiate, manage and/or express emotions, and control impulses. Cognition may also be compromised (less able to focus on consequences)
9. 30% of kids who were abused go on to abuse their children

# Service implications for the age-reframe

Some things you may begin to encounter more:

- Parents
- Clients who don't live with family
- No longer in school and don't have access to school-based services
- Unstable housing and financial situations
- Engagement in risky behaviors (e.g., unsafe sex and substance abuse)

If not already doing so, consider screening for these things at intake to better understand a YA's situation

# Vignette time!

Carlos is a 19 y.o. M who has been in psychiatric hospitals since he was sectioned at 5 years old.

Carlos has a history of childhood trauma including abuse and neglect

Carlos also has a history of depression, anxiety, self-harm behaviors (non life-threatening) and struggles with low self-esteem

Carlos received his GED last year by going to school while he was in treatment (this was a big deal for him- it wasn't easy). Carlos' family wants him to get a job but he's not sure what he wants

Carlos is now out of the hospital and is being referred to DMH for case management

How do we  
set Carlos up  
for Success?

WHAT  
DO  
YOU  
THINK?



# Setting up Carlos for Success

1. Motivational Interviewing- helpful to clinicians because it can help YA's figure out if/how they want to improve their lives
  
2. Develop self-awareness through practice!
  - i. Journaling feelings
  - ii. Meditation- Guided body scans are great for beginners- available on YouTube
  - iii. Diaphragmatic Breathing (breathing from the stomach rather than just lungs)

# Setting up Carlos for Success

3. Practice introspection and self-reflection- this will help a YA to think about reaching out BEFORE they get into crisis mode. For some YA's this is going to be especially hard but it's not impossible!
  - i. Think about times of crisis/relapses by asking the client what happened when they relapsed, what did or didn't help then?
  
4. Teach stress management/healthy coping skills- diaphragmatic breathing, pausing and counting to 10, removing/reducing stressful environments when possible

# Setting up Carlos for Success

5. Teach adolescents to accurately identify and effectively manage emotions! Research has shown that this may not only lead to increases in the quality of their social support, it may also make them more willing to use it when they are struggling (Rickwood et al. 2005)
6. Work with YA's to create a regular self-care routine! Self-care is a skill that can take a lifetime to master, starting to practice this skill at a young age may give YA's a head start in learning to respect and take care of themselves. This in turn, can help increase their self-efficacy and translate their desire to improve their lives into action

# Setting up Carlos for Success

7. Skill development for executive functioning
  - i. Teach basic calendaring skills
  - ii. Teach basic memory skills (how to use mnemonics, rhyming, visual imagery and association to better remember information)
  - iii. Teach basic note-taking skills
  - iv. Teach basic interpersonal skills (being aware of other people's needs/desires, basic social norms, racial/ethnic/religious/cultural diversity)