Adolescent Sexual Health and Traumatic Brain Injury

Mary Romano, MD MPH

Divis. of Adolescent Medicine/Dept of Pediatrics

Vanderbilt University Medical Ctr, Nashville TN

Rachel Kaplan, MPH

Founder and Disability Consultant

Kintsugi Consulting, LLC, Greenville SC

Goals and Objectives

Review	Discuss	Highlight	Discuss
Review the physical, psychological and neurobiological changes that occur during adolescence.	Discuss how a neurologic injury such as a TBI or mTBI might disrupt this dynamic process--physical and psychological effects.	Highlight best practices for providing culturally competent care to adolescents who have experienced a TBI or mTBI (possible case presentation)	Discuss how to best support families as they navigate the challenges of parenting an adolescent who has experienced a TBI or mTBI.

TBI = Traumatic Brain Injury
mTBI = mild Traumatic Brain Injury, also known as a concussion

Adolescence vs. Puberty

Adolescence:

- Dynamic process characterized by simultaneous but asynchronous development in several areas.

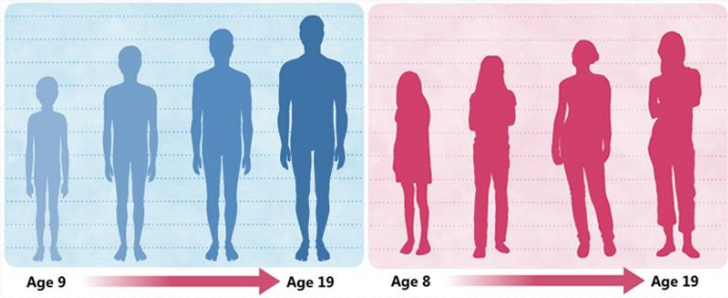
Puberty:

- Physical development that occurs during adolescence.
- Defines onset of adolescence.

TBI vs. Mild TBI (mTBI)

- mTBI/concussion typically resolves within 28 days
- TBI can result in long-term or lifelong impact
- Both can cause changes in someone's physical, cognitive, emotional, and behavioral functioning – all of which can impact daily life at work, school, employment, etc.
  - This includes within relationship dynamics
- This is one type of brain injury
  - Brain injury is classified as a disability under the Americans with Disabilities Act (enacted in 1990)
  - Disability = something that impacts your day-to-day life in one or more ways

Puberty



Physical changes through which a child's body matures and become capable of reproduction.

Mediated by sex steroids ("hormones")

Variable in onset, timing, tempo.

Influenced by genetics, general health and nutrition, environmental and socioeconomic factors.

Racial and ethnic variations also seen.

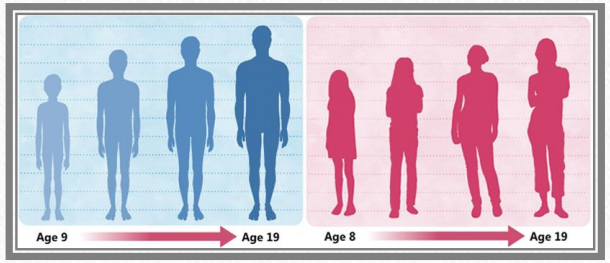
Onset of puberty differs between African Americans, Hispanics and Caucasians.

Puberty and Ethnicity

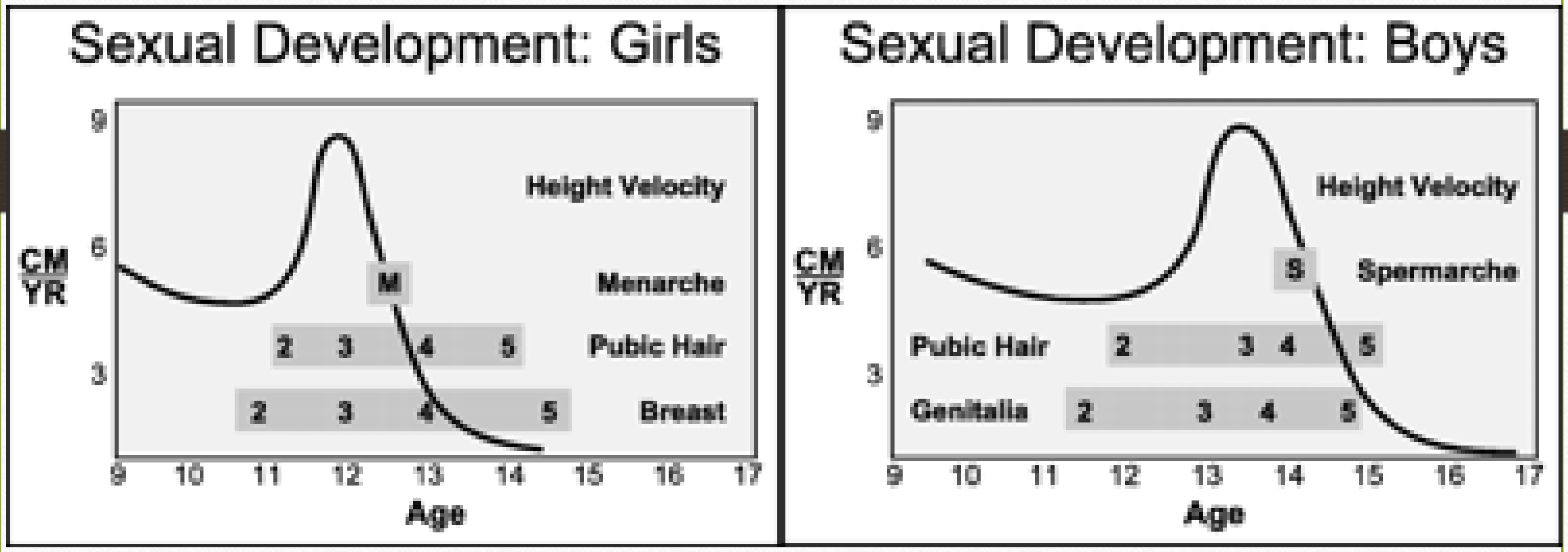
Ethnic Group	Mean Age of Thelarche	Mean Age Adrenarche	Mean Age Menarche
African American Girls	9.5 years	9.5 years	12.1 years
Mexican-American Girls	9.8 years	10.3 years	12.2 years
Caucasian Girls	10.5 years	10.5 years	12.7 years

Puberty

- Tanner Staging is used to stage physical progression through puberty.
- Variations in timing of puberty can have significant psychological impact on adolescents.
  - Girls (Early NEG) versus Boys (Late NEG)
- Physical/Pubertal development is often completed early on in adolescence– especially in girls.
- Physical development versus Emotional/Cognitive Development

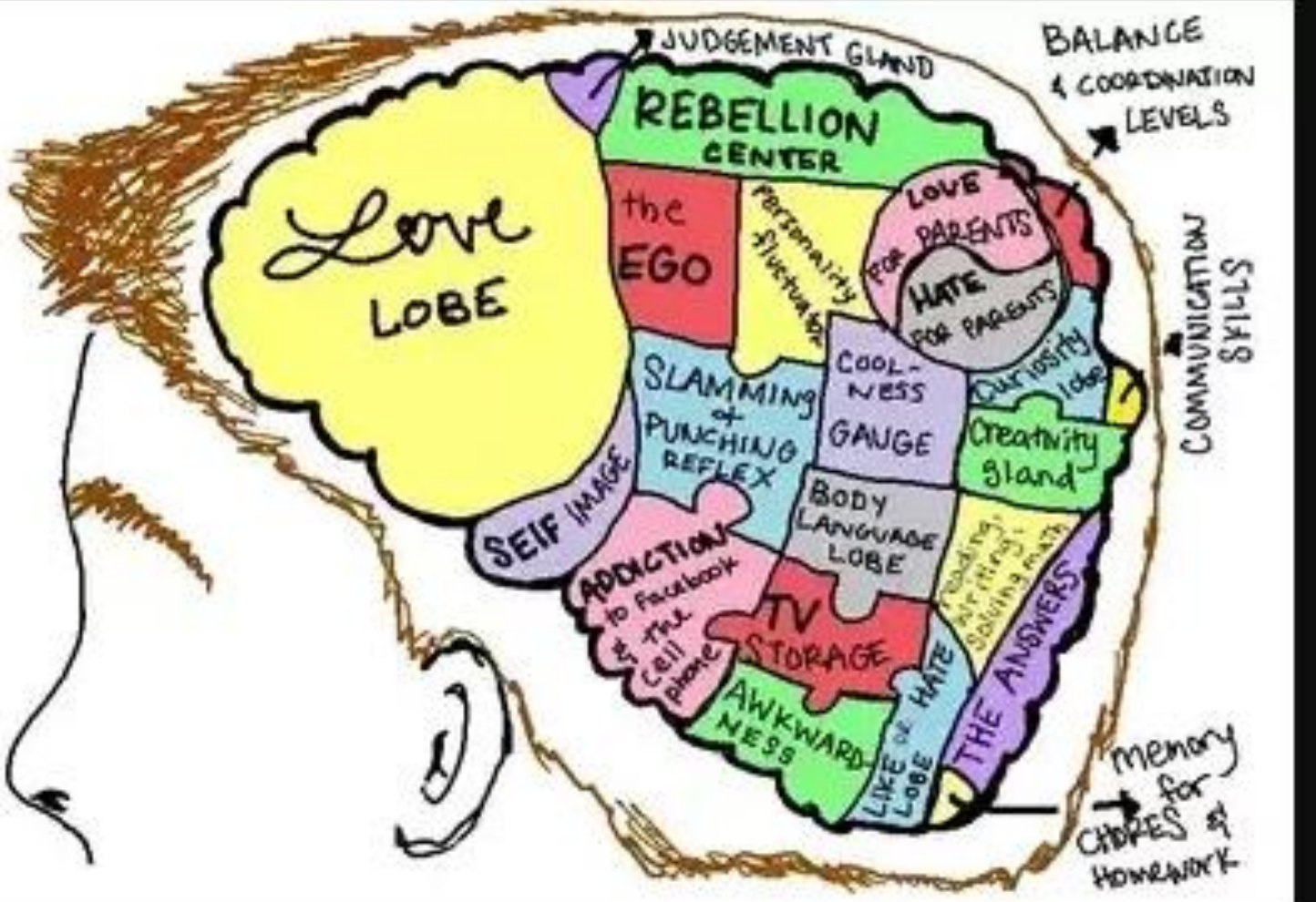


Puberty


Sexual Development: Girls
CM
YR
9
6
3
Height Velocity
M
Menarche
2 3 4 5
Pubic Hair
2 3 4 5
Breast
9 10 11 12 13 14 15 16 17
Age
Sexual Development: Boys
CM
YR
9
6
3
Height Velocity
S
Spermarche
Pubic Hair
2 3 4 5
Genitalia
2 3 4 5
9 10 11 12 13 14 15 16 17
Age

Adolescent Brain Development

THE AVERAGE TEENAGE BRAIN



Psychosocial Tasks of Adolescence

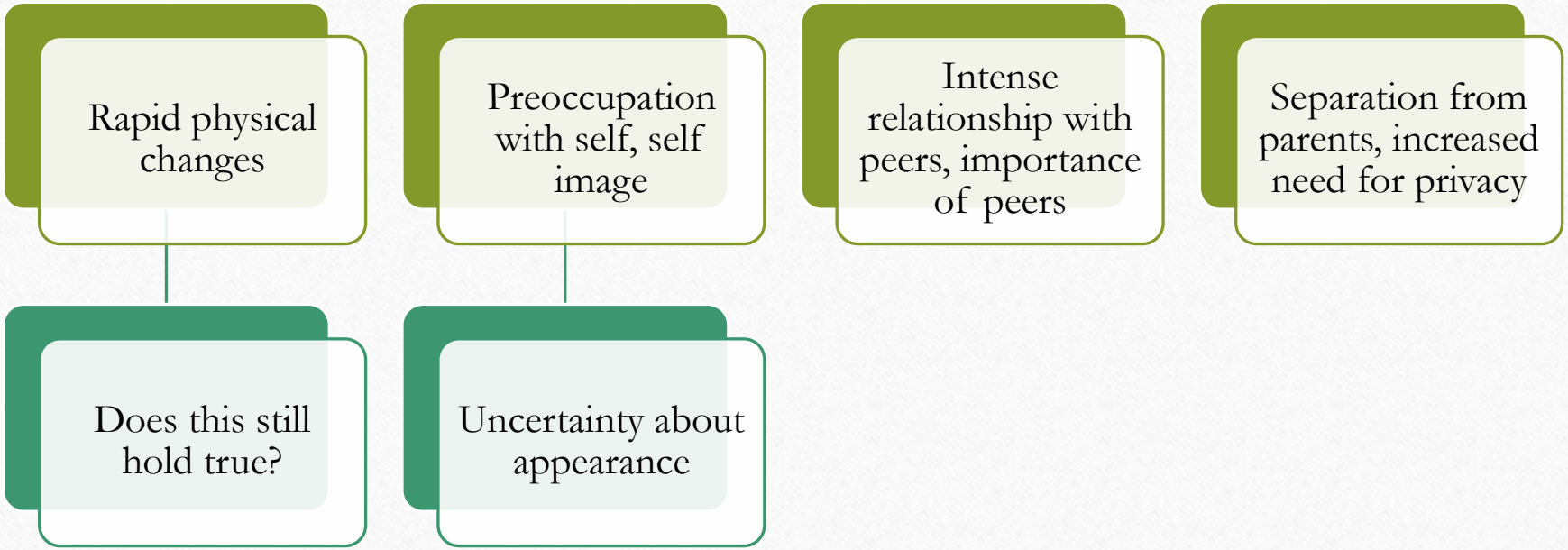
5 Tasks:

1. Emotional separation from parents
2. Greater sense of personal identity
3. Identification with a peer group
4. Assigning increased importance to body image and acceptance of one's body
5. Establishing sexual, vocational and moral identities

Adolescent Psychosocial Development

- Not a linear, predictable, process– will look different in different people
- Early- 11 to 13 years
- Middle- 14 to 16 years
- Late- 17 to 21 years

Early Adolescence



Middle Adolescence

Peak of parental conflicts	Powerful role of peer groups	Acceptance of body image	Feelings of omnipotence
• Attempts at separation • Role of other adult figure	• **Negative or positive**	• **Preoccupation with making body more attractive** • **Sexual relationships** • **Sexual experimentation**	• **Risk taking behaviors** • **Limited capacity for abstract reasoning**

Late Adolescence

- Reacceptance of parental advice/values
- Acceptance of pubertal changes
- Refinement of moral, sexual values
- Ability to compromise and set limits
- (In a perfect world!)

Adolescent Brain Development

Brain continues to develop during adolescence

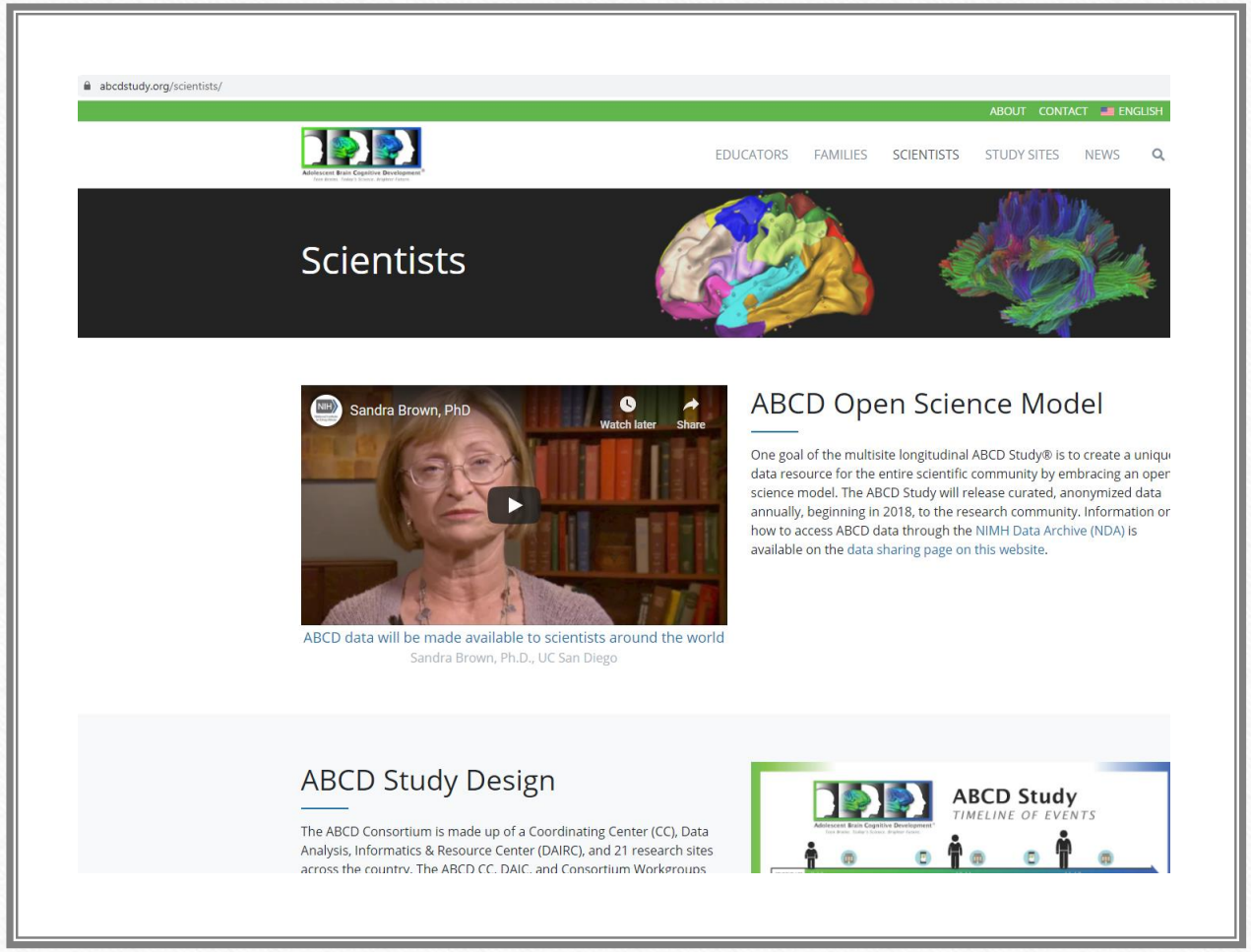
90% of brain development achieved by 6 years old

- Gross architecture, general size

2nd "growth spurt" at onset of adolescence

Followed by organization during adolescence

Grey/white matter components continue to undergo dynamic changes throughout adolescence



Adolescent Brain Development

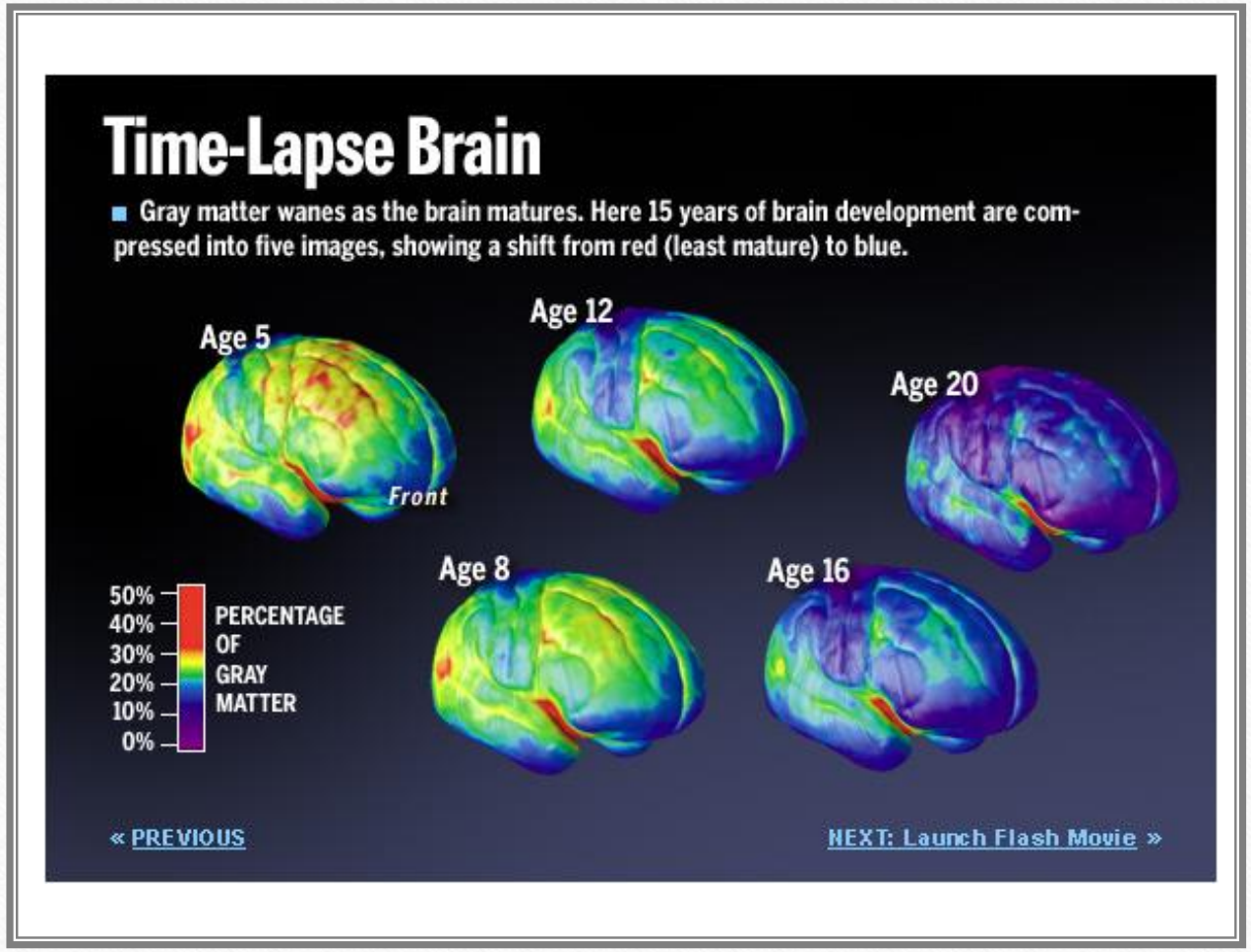
- 2001 NIMH/Child Psychiatry
  - Dr Gied/400 adolescents/fMRI, DTI
- 2015 ABCD Study (renewed April 2020)
  - 21 sites/10,000+ Adolescents/10 years (9y)
  - https://abcdstudy.org/
  - Substance use, environmental, social, genetic/biologic effects on adolescent brain
  - PLUS social media use/screen time
  - Data share started 2018

Adolescent Brain Development

- Three distinct processes:
- Proliferation→ Pruning→ Myelination
- Predictable Sequence

Limbic System → Prefrontal Cortex

Reward Center → Abstract Thinking



•SOURCES: Dr. Jay Giedd, Chief of Brain Imaging, Child Psychiatric Branch—NIMH; Paul Thompson; Andrew Lee; Kiralee Hayashi; Arthur Toga—UCLA Lab of Neuro Imaging and Nitin Gogtay; Judy Rapoport—NIMH Child Psychiatry Branch.

Adolescent Brain Development

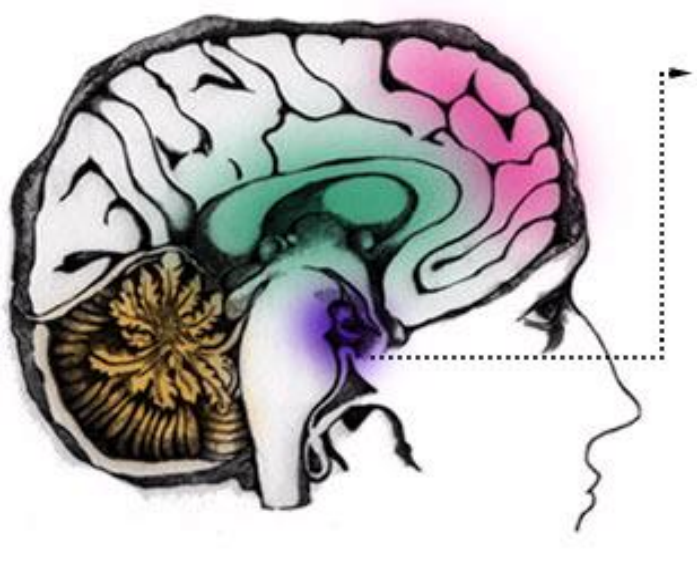
What drives pruning?

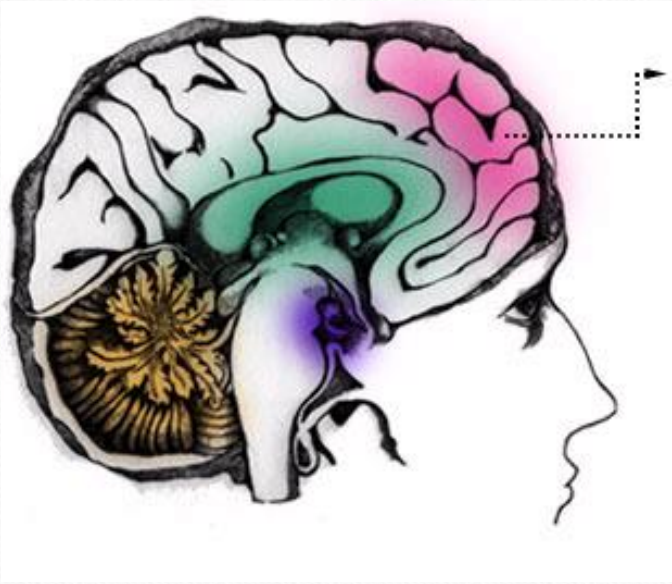
- Role in psychiatric illness? Substance use? Role of genetics?

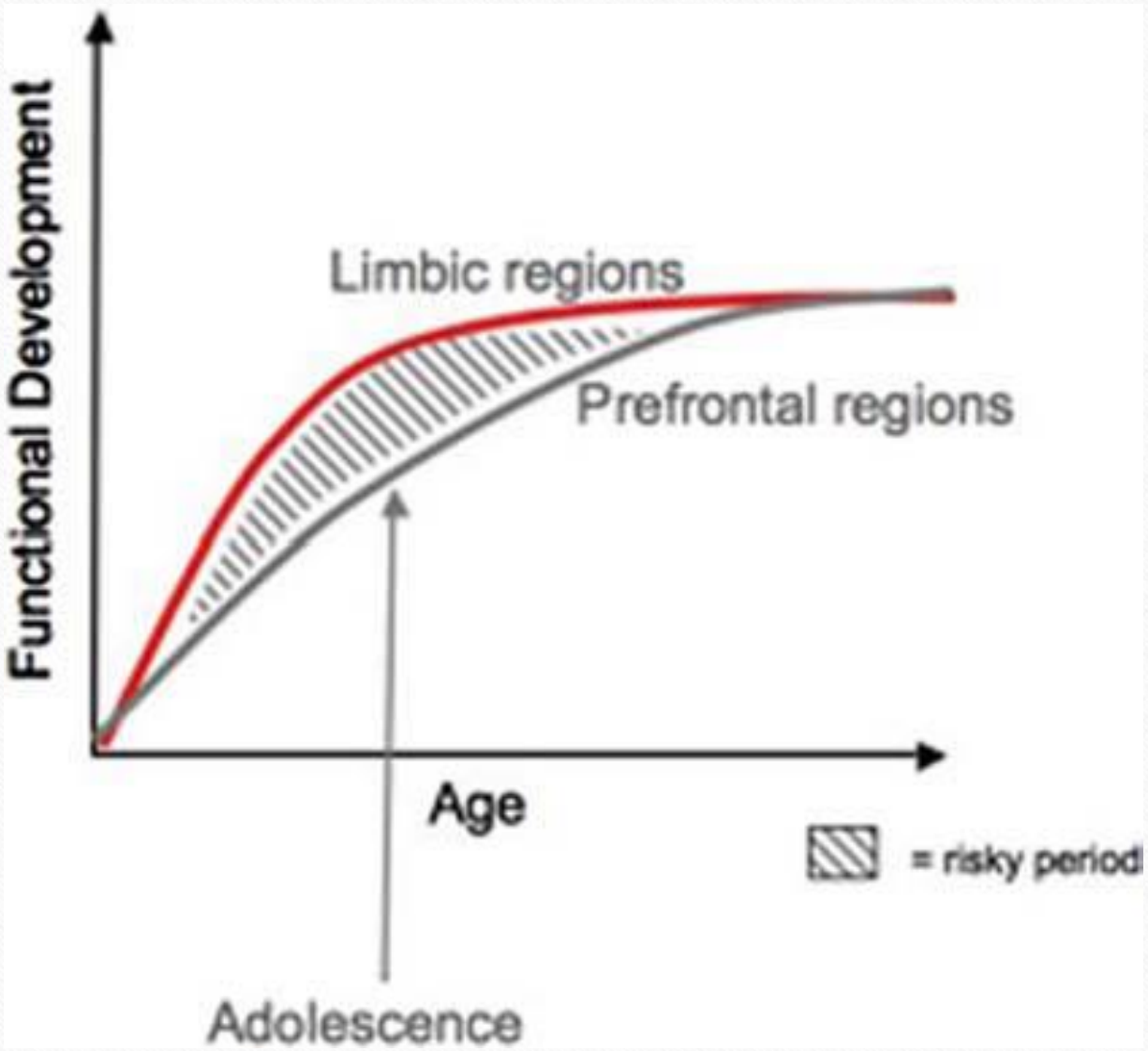
Myelination changes

- Significant increases in white matter volume during adolescence (vs decreases in gray matter)
- Focal recruitment of pathways over time
- Facilitates/Strengthens connections
- “Optimum efficiency”

- Relative imbalance between the 2 systems during adolescence
  - fMRI: greater activity in amygdala versus prefrontal cortex in younger adolescents in response to “emotional situations”
  - Heightened response to rewards/pleasure with decreased capacity to control/weigh risks






Functional Development
Limbic regions
Prefrontal regions
Age
= risky period
Adolescence

What is Mental Age Theory? And Why is it Harmful?

- Mental Age Theory = a way to measure an individual's maturity and intelligence by comparing their individual IQ score to the score on a standardized IQ test for peers of their same age-group.
  - Insinuates that someone with an intellectual and developmental disability (IDD), which TBI and mTBI can fall into, is not "the same" as their peers of the same age.
  - This infantilizes individuals with IDD
  - The belief that people with low IQ scores are not "acting their age" creates a difference in the information provided to them.

Adolescents and TBIs

Injury can affect and/or interrupt development

- Early injuries can affect trajectory of development.

Adolescent brain is dynamic

- Importance of reassessment post injury

Can be difficult to determine "disordered" vs "different" due to heterogeneity of development and individual differences.

Where is the injury? When is the injury?

- Early adolescence may increase risk of long-term impacts on development
- Prefrontal cortex and its effect on inhibition, control

Adolescents and TBIs

Physical changes

- Can affect physical abilities which affect sexual function, perception of oneself as a sexual being and/or attractiveness to others
- Can be a cause of precocious or delayed puberty which has sexuality implications.
- Less understood/studied in females

Adolescents and TBIs

Psychological/behavioral changes

- Can affect inhibition, emotional lability, understanding of social cues
- At risk for exploitation or abuse especially if early physical development
- Perception of self or changes to mood may impact relationships, social skills.
- Mood changes can affect apathy/interest

Adolescents and TBIs

Medication Side effects

- Antidepressants, seizure medication, serotonin agonists
- All can affect sexual function which affects adherence
- Comfort level in discussing with provider

How is the patient perceived?

- Lack of privacy, autonomy confidentiality
- Not seen as a sexual being
- Lack of access to education

Perceived as a Vulnerable Population	**Perceived as an Uninformed Population**
Information is withheld/lack of education	Education and knowledge transfer is prioritized
Higher risk for abuse or assault	Lower risk of abuse or assault because individuals are informed and have practiced important skills related to consent, identifying red flags, and making healthy decisions
Less likely to know their rights	More likely to know their rights
Less likely to know how to self-advocate and do so	More likely to know how to self-advocate, be a self-advocate, and reach out for support
Young adults and adults are infantilized and treated like children (often and particularly if their disability is I/DD)	Age-appropriate education and resources are provided based on chronological age. Adapting resources to make them accessible based on disability is step two of this process.
Rights and freedoms are restricted or taken away in the "name of safety"	Safeguards are put in place, with direction from the individual, to ensure rights are intact if assistance or support is needed

Why is This Important?

A: sexual predator, hypersexual, doesn't understand consent, makes others uncomfortable

vs

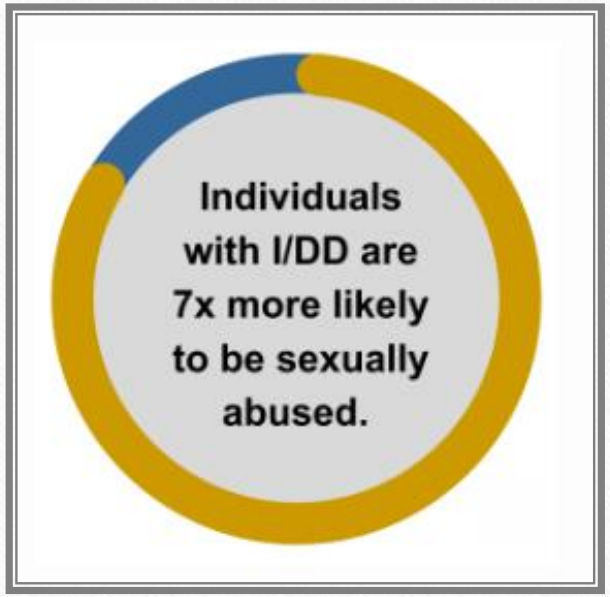
B: unsure how to navigate relationships, doesn't understand their body/pregnancy prevention, no education about healthy relationships or condom/birth control/STI prevention

vs

C: victimized, hyposexual/ hyposexualized, doesn't know about consent, experiences unwanted sexual activity/ STI/ pregnancy/ etc.

Let's Review Some Statistics:

- People with disabilities (not institutionalized) are 2-3 times more likely to experience violent crimes
- People with disabilities (not institutionalized) are at 40% greater risk of intimate partner violence, especially severe violence
- In 2018, data from people age 12+ showed that 31.8% of men with a disability experienced violent victimization, versus 14.1% of men without a disability
- In 2018, data from people age 12+ showed that 32.8% of women with a disability experienced violent victimization, versus 11.4% of women without a disability
- There is increased risk of violence for intersecting populations (BIPOC, LGBTQ+, non-citizens)



How to Provide Appropriate Support to Youth with TBIs

Meet the young adults where they are

Treat	Treat them as an adolescent going through puberty
Figure out	Figure out what they have learned so far – may need to start with the basics of healthy relationships and social skill building
Use	Use teaching styles that work well for them • Visual components • Hands on practice of skill building (matching activities, demonstrations, etc.)
Provide	Provide examples and model skill building in day-to-day life • Topic of consent may be difficult when discussed only in the context of sexual education
Find	Find curriculum that has been created with someone with a TBI or intellectual disability in mind

Utilize the Independent Living philosophy of "nothing about us without us"

- Find someone with a TBI to facilitate conversation and education
- Lean on experts who can assist:
  - Center for Independent Living in your area
  - Sexual Health Educator with experience working with youth with disabilities
  - Curriculum or information created for and by someone with a disability
- Ask the young person what questions they have to help guide their education
  - This ensures that you provide accurate answers to their most pressing questions and reinforce expected and safe behaviors

Use evidence-based or evidence-informed curriculum

- This reduces inaccurate information
- Prevents stigma, stereotyping, and negative self-perception based on how information is discussed
- The topics of sexuality, sexual health, sexual activity, etc. are normal – utilize programs and resources that normalize discussing sexuality
  - Remember, informed vs. vulnerable

CURRICULUM | TABLE OF CONTENTS

CURRICULUM | TABLE OF CONTENTS

Supporting Parents and Guardians

1. Advocate for your young adult to receive sexual health education in school
2. Find support of additional programs or educators to meet your child at their need level
3. Seek resources to foster conversations with your young adult child
4. Be proactive about education and conversations
5. Normalize feelings. TBI/ mTBI doesn't negate sexual desires or adolescent development.

Supporting Parents and Guardians

- Treat them as their age. As a young adult it is normal to:
  - Question sexuality
  - Have increased hormones
  - Be interested in sex or dating or relationships
  - Have a curiosity about pornography
  - Explore masturbation

Normalize Talking about Sex

- Education, information prevents unintended consequences
- Ask about sexuality
  - Attractions, urges
  - Be aware that there may be family values, shame that affect adolescent's willingness to share
  - Previous experiences with healthcare providers
- Ask about Sexual behaviors
  - Don't make assumptions

Adolescent Confidentiality

Adolescents are entitled to confidentiality by law as it pertains to their sexual health and contraceptive health.

Don't forget importance of interviewing adolescents without their parents present.

Important to educate patients and parents about confidentiality and when it does and doesn't apply.

www.Guttmacher.org

Disability and the LGBTQ Population

Resources to Check Out

Advocates for Youth: www.advocatesforyouth.org

Elevatus Training: www.elevatustraining.com

Respect Ability: www.respectability.org

Healthy Relationships, Sexuality and Disability Guide (2014) from Massachusetts: https://www.mass.gov/files/documents/2016/07/xe/hrhs-sexuality-and-disability-resource-guide.pdf

MultiSystem Knowledge Translation Center (MSKTC): https://msktc.org/tbi/factsheets/sexuality-after-traumatic-brain-injury

Questions?

Rachel Kaplan:
racheltckaplan@kintsugiconsultingllc.com

Mary Romano: **mary.romano@vumc.org**