

## Adolescence and Brain Development

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## Crime and culpability

At age 17, Christopher Simmons and his friend, robbed a woman, tied her up, and threw her over a bridge.

## Crime and Culpability

- ✦ Simmons was convicted of murder and sentenced to death by a Missouri court in 1994.
- ✦ The Supreme Court initially supported the ruling, but later (2005) ruled that capital punishment of juvenile offenders violated the Eighth Amendment
- ✦ The ruling was based upon sociologic and scientific research showing juveniles were less mature compared to adults
- ✦ At 17 years of age, the brain is not yet fully developed.

## Adolescence

- ✦ Early adolescence is a tumultuous life stage where adolescent risk taking and impulsivity appear to dominate youth reality
- ✦ In reaction, society has adopted a general perspective that youth are distinctively different from adults and children.

## How are adolescents different?

- ✦ Adolescents undergo periods of confusion and inner conflict as they seek to form their identity
- ✦ They respond more dramatically to hormones (for this purpose of this session, this will not be further discussed)
- ✦ They tend to process information with the *amygdala* rather than the prefrontal cortex

## Adolescents and Emotions

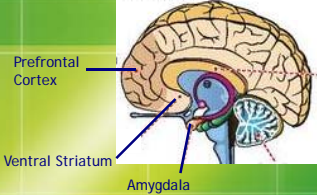
- ✦ Adolescents recover more slowly from depression
- ✦ One in twelve adolescents considers suicide

## Adolescents and delayed brain development

- ✦ Adolescents react more with their amygdala
- ✦ The prefrontal cortex (rational decision making) is the last area of the brain to mature

## The Adolescent Brain


The prefrontal cortex, also known as the "executive brain", does not fully develop until adulthood. Until then, other parts of the brain control responses that often lead to undesirable consequences.



The diagram shows a sagittal view of the brain with three regions highlighted and labeled: the Prefrontal Cortex at the front, the Ventral Striatum in the center, and the Amygdala at the back.

## Prefrontal cortex

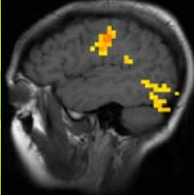
- ✦ Area of the brain that does not completely mature until the individual is in his/her early to mid-twenties.
- ✦ This area is responsible for moral reasoning, judgment, and decision making
- ✦ Before this area is fully developed, adolescents tend to act impulsively without fully being aware of the consequences of their actions.



The diagram shows a profile of a human head with the prefrontal cortex area shaded in green.

## What do we know about brain development?


- ✦ Before the '90s scientists learned about the brain through animal research, post-mortem studies or observations of people with aberrant behavior
- ✦ With the introduction of functional Magnetic Resonance Imaging (fMRI) and PET (Positron Emission Tomography), scientist were able record activity in the brain that occurred in response to select stimulus



The image is a cross-sectional fMRI scan of a brain with several yellow-colored regions indicating areas of increased blood flow or metabolic activity.

## What is MRI?

- ✦ Magnet
- ✦ Person
- ✦ Signal from hydrogen
- ✦ Receiver
- ✦ Computer transformation
- ✦ Image

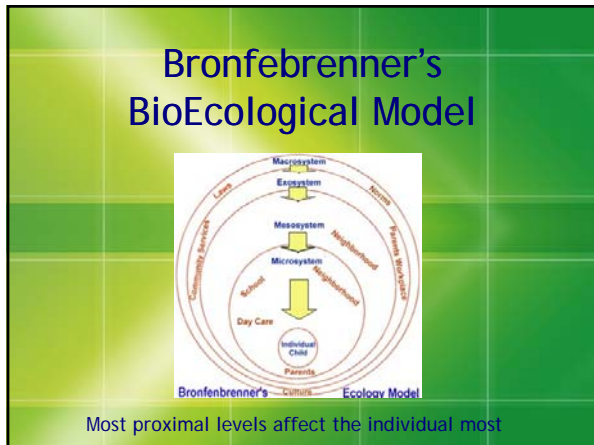
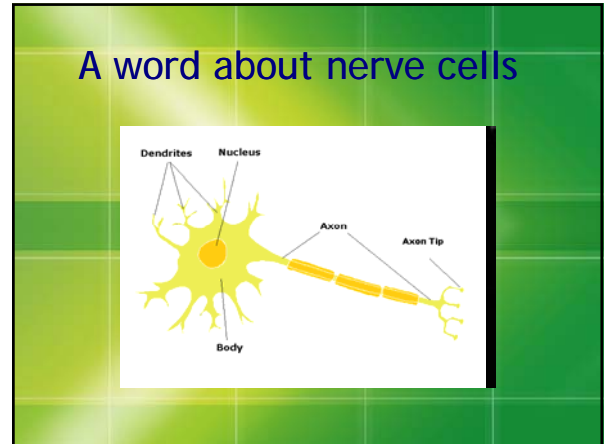


The image contains two parts: a diagram of a person lying inside an MRI scanner tube, and a resulting MRI scan of a human brain in a sagittal view.

## What we've learned

- ✦ Early experiences impact the development of the brain and influence the way its circuits become "wired."
- ✦ Neural pathways that are not regularly used during adolescence are eliminated through a natural "pruning" process

- ⊕ Science shows that adolescents are not fully capable of impulse control, decision-making, and reasoning.
- ⊕ Ironically, the region of the brain that controls these functions is the area "judged" within the legal system



- ### Connecting Research to Policy
- ⊕ Roper v. Simmons (2005), Abolished the death penalty for offenses committed prior to age 18
  - ⊕ Graham v. Florida (2010), Unconstitutional to sentence a person under age 18 to life without parole in non-homicide cases.

- ### Adolescent Reasoning and Understanding in Court
- ⊕ 33% of 11-13 year olds and
  - ⊕ 20% of 14-15 year olds were significantly impaired in their reasoning and understanding of the judicial process.
  - ⊕ Tend to comply with authority, even if that means false confessions

## Juvenile Competency (SB 246, 247)

- ✦ Juveniles have a due process right not to be subjected to the adjudicative phase of juvenile proceedings while incompetent, *In re Carey, 241 Mich App 222 (2000)*
- ✦ Establish definition
- ✦ Establish age of presumed incompetence
- ✦ Determine who is qualified to conduct evaluations
- ✦ Determine developmentally appropriate restoration process

## *In Re Carey (2000)*

- ✦ "It is possible that a juvenile, merely because of **youthfulness**, would be unable to understand the proceedings with the same degree of comprehension as an adult would..."
- ✦ "Accordingly, we further hold that, in juvenile competency hearings, competency evaluations should be made **in light of juvenile, rather than adult norms.**"

## Juvenile Defense

- ✦ Every U.S. citizen, including youth, has the right to an attorney if accused of a crime, even if he/she cannot afford one. (*In re Gaulf*)
- ✦ Michigan has no standards or oversight:
  - ✦ Few attorneys specialize in juvenile defense
  - ✦ Lack training in adolescent development
  - ✦ No funding for experts or investigators
  - ✦ Lack of consistent representation

## Prosecuting Kids as Adults

- ✦ In 1988, the legislature created an automatic waiver to allow prosecutors to bypass the juvenile system and directly charge 15- and 16-yr olds as adults for certain crimes.
- ✦ In 1996, the legislature further expanded "get tough" laws - the automatic transfer provision was expanded to include 14-yr olds.
- ✦ All youth facing charges as adults are required to receive same sentences.

## Juvenile Life Without Parole

- ✦ Over 340 individuals in MI were sentenced to life prior to their 18<sup>th</sup> birthdays
- ✦ Over 40% are serving for felony murder - age and circumstance of offense not considered
- ✦ Legislative goals:
  - ✦ Ban mandatory life sentences for youth
  - ✦ Reduce existing sentences to 25 years, restore parole eligibility to those who have served 15 years
  - ✦ Ban use of prison for anyone under 18

## Inappropriate Treatment = Dangerous Consequences

- ✦ 50-80% of youth released from juvenile correctional facilities are rearrested within two to three years, even those who were not serious offenders prior to commitment.
- ✦ Prisons/facilities have high rates of documented abuse and maltreatment against youth.
- ✦ Youth tried in adult courts and punished in adult corrections are more likely to commit subsequent crimes - and more violent crime - than their counterparts in the juvenile justice system.

**Developmentally-Appropriate Practices**

- ▶ Individualized, community-based, family-center, strength-based, culturally competent, gender-specific
- ▶ Best programs worked intensively with parents and other family members in addition to the child - and cost far less than incarceration.
- ▶ Missouri Model of residential treatment

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