

# Jefferson County Sheriff's Office

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Committee on Corrections and Juvenile Justice House Bill No. 2467  
Hearing: Monday, January 23, 2012, 1:30 PM Room 144-S

Madam Chair Colloton, Vice Chairman Kinzer and Esteemed Members of the Committee on Corrections and Juvenile Justice.

My name is Kirk Vernon and I am a Detective Sergeant with the Jefferson County Sheriff's Office. I would like to Thank You for the opportunity to come and visit with you today on behalf of House Bill 2467 AN ACT concerning crimes, criminal procedures and punishment relating to the transmission of sexually explicit or nude images of minors.

I want to take a moment to thank 47<sup>th</sup> District State Representative Ramon Gonzalez and Sean Ostro from the Office of The Revisor for helping craft this House bill as well as Chairwoman Colloton and the Committee for visiting this issue.

I have been employed as a law enforcement officer with the Jefferson County Sheriff's Office since July of 1994. I have been involved in working Child Abuse and Child Sex Abuse cases since 1996 and during that time have conducted hundreds of investigations in this area. I have witnessed virtually every type of victimization of a child including what we are here to talk about today.

From where I sit I see two root causes creating the need for this legislation. The proliferation of technology and the rate at which the adolescent brain develops.

Search the term adolescent brain development through Google and you'll receive nearly 16 million site hits. From what I can tell the majority come to the same conclusion in one way or another. Adolescents brains are not fully developed. I have attached two articles from the Juvenile Justice Center and Act For Youth to serve as an outline for this point. I feel both articles are fair and accurate representations of what contemporary wisdom believes about adolescent brain development.

From the Act For Youth Article

Brain Regions and functions

Frontal lobe—self-control, judgment, emotional regulation; restructured in teen years

Corpus callosum—intelligence, consciousness and self-awareness; reaches full maturity in 20's

Parietal lobes—integrate auditory, visual, and tactile signals; immature until age 16

Temporal lobes—emotional maturity; still developing after age 16

To the second point our statutes have not been keeping up with technology. Through the proliferation of the internet, cell phones, digital cameras, and other means of electronic communication the availability of the individual to create, distribute, and imagine new ways to commit crimes (and in some cases of juveniles, unknowingly) is only limited to the technology available at hand which we all know is expanding daily. We are not going to stop "progress", but we can help protect children from it and themselves.

Today's technology has in many ways removed accountability. The idea of obtaining inappropriate images is not a new one. Back in the day kids did not engage in this activity because they were afraid the pharmacist at the local drugstore

House Corrections and Juvenile Justice  
Committee

2012 Session

Date 1-23-12

Attachment # 2-1

would call their parents if they tried to produce or have such images developed. Then came the invention of the Polaroid and with it for people of my age at least the beginning of the loss of accountability.

Remove accountability add in an undeveloped adolescent brain and poor decisions and actions can occur. I stand here a proponent of HB No.2467 as the solution it provides is far better than anything currently contained in the Kansas Statutes Annotated.

That being stated I would ask the committee to consider adding language similar to that found in KSA 21-5507 Unlawful Voluntary Sexual Relations where two of the qualifiers for prosecution under that statute are as follows;

- (2) when the offender is less than 19 years of age;
- (3) when the offender is less than four years of age older than the child

**Scenario**

Johnny is a senior and 17 years of age. He is dating Becky who is also 17. In September Becky sends Johnny an inappropriate photo via text message showing her in a state of nudity. This was done at Johnny's request. Under this proposed section Johnny could be charged with Unlawful Possession of a Visual Depiction of a Minor, and Becky could be charged with Unlawful Transmission of a Visual Depiction of a Minor both class A Misdemeanors.

In October Johnny turns 18.

In November Becky still 17 sends another inappropriate photo via text message to Johnny now 18 showing her in a state of nudity. This again was done at Johnny's request. Under the proposed Act Becky could still be charged with the Class A Misdemeanor (or the level 9 non-person felony as this could be considered a second act), and Johnny no longer a minor could be charged with KSA 21-5510 Sexual Exploitation of a Child a level 5 person felony. Provided Johnny has no prior criminal convictions and if convicted Johnny could be subject to 32 months in the custody of the Secretary of Corrections and a 25 year registration as a sexual offender.

I believe that when the Legislature crafted KSA 21-5507 Unlawful Voluntary Sexual situations similar to the above are what they had in mind.

**I thank you for your time and open the floor for any questions.**

**Kirk W. Vernon, Det. Sgt. #64  
Jefferson County Sheriff's Office**

**Attachments:**

**KSA 21-5510**

**KSA 21-5507**

**N.C.S.L. 2011 Legislation Related to "sexting"**

**Juvenile Justice Center-Adolescent Brain Development and Legal Culpability**

**ACT for Youth Upstate Center of Excellence-Adolescent Brain Development**

## Sexual Exploitation of a Child 21-5510

**21-5510. Sexual exploitation of a child.** (a) Sexual exploitation of a child is:

- (1) Employing, using, persuading, inducing, enticing or coercing a child under 18 years of age, or a person whom the offender believes to be a child under 18 years of age, to engage in sexually explicit conduct with the intent to promote any performance;
- (2) possessing any visual depiction of a child under 18 years of age shown or heard engaging in sexually explicit conduct with intent to arouse or satisfy the sexual desires or appeal to the prurient interest of the offender or any other person;
- (3) being a parent, guardian or other person having custody or control of a child under 18 years of age and knowingly permitting such child to engage in, or assist another to engage in, sexually explicit conduct for any purpose described in subsection (a)(1) or (2); or
- (4) promoting any performance that includes sexually explicit conduct by a child under 18 years of age, or a person whom the offender believes to be a child under 18 years of age, knowing the character and content of the performance.

(b) (1) Sexual exploitation of a child as defined in:

- (A) Subsection (a)(2) or (a)(3) is a severity level 5, person felony; and
- (B) subsection (a)(1) or (a)(4) is a severity level 5, person felony, except as provided in subsection (b)(2).

(2) Sexual exploitation of a child as defined in subsection (a)(1) or (a)(4) or attempt, conspiracy or criminal solicitation to commit sexual exploitation of a child as defined in subsection (a)(1) or (a)(4) is an off-grid person felony, when the offender is 18 years of age or older and the child is under 14 years of age.

(c) If the offender is 18 years of age or older and the child is under 14 years of age, the provisions of:

- (1) Subsection (c) of K.S.A. 2011 Supp. 21-5301, and amendments thereto, shall not apply to a violation of attempting to commit the crime of sexual exploitation of a child as defined in subsection (a)(1) or (a)(4);
- (2) subsection (c) of K.S.A. 2011 Supp. 21-5302, and amendments thereto, shall not apply to a violation of conspiracy to commit the crime of sexual exploitation of a child as defined in subsection (a)(1) or (a)(4); and
- (3) subsection (d) of K.S.A. 2011 Supp. 21-5303, and amendments thereto, shall not apply to a violation of criminal solicitation to commit the crime of sexual exploitation of a child as defined in subsection (a)(1) or (a)(4).

(d) As used in this section:

- (1) "Sexually explicit conduct" means actual or simulated: Exhibition in the nude; sexual intercourse or sodomy, including genital-genital, oral-genital, anal-genital or oral-anal contact, whether between persons of the same or opposite sex; masturbation; sado-masochistic abuse with the intent of sexual stimulation; or lewd exhibition of the genitals, female breasts or pubic area of any person;
- (2) "promoting" means procuring, transmitting, distributing, circulating, presenting, producing, directing, manufacturing, issuing, publishing, displaying, exhibiting or advertising:
  - (A) For pecuniary profit; or
  - (B) with intent to arouse or gratify the sexual desire or appeal to the prurient interest of the offender or any other person;
- (3) "performance" means any film, photograph, negative, slide, book, magazine or other printed or visual medium, any audio tape recording or any photocopy, video tape, video laser disk, computer hardware, software, floppy disk or any other computer related equipment or computer generated image that contains or incorporates in any manner any film, photograph, negative, photocopy, video tape or video laser disk or any play or other live presentation;
- (4) "nude" means any state of undress in which the human genitals, pubic region, buttock or female breast, at a point below the top of the areola, is less than completely and opaquely covered; and
- (5) "visual depiction" means any photograph, film, video picture, digital or computer-generated image or picture, whether made or produced by electronic, mechanical or other means.

**History:** L. 2010, ch. 136, § 74; L. 2011, ch. 100, § 16; July 1.

## Unlawful Voluntary Sexual Relations 21-5507

**21-5507. Unlawful voluntary sexual relations.** (a) Unlawful voluntary sexual relations is:

- (1) Engaging in any of the following acts with a child who is 14 or more years of age but less than 16 years of age:
  - (A) Voluntary sexual intercourse;
  - (B) voluntary sodomy; or
  - (C) voluntary lewd fondling or touching;
- (2) when the offender is less than 19 years of age;
- (3) when the offender is less than four years of age older than the child;
- (4) when the child and the offender are the only parties involved; and
- (5) when the child and the offender are members of the opposite sex.

(b) Unlawful voluntary sexual relations as defined in:

- (1) Subsection (a)(1)(A) is a severity level 8, person felony;
- (2) subsection (a)(1)(B) is a severity level 9, person felony; and
- (3) subsection (a)(1)(C) is a severity level 10, person felony.

**History:** L. 2010, ch. 136, § 71; July 1, 2011.

## 2011 Legislation Related to "Sexting"

*Last update: September 2, 2011*

In 2011, at least 21 states and Guam introduced bills or resolutions aimed at "sexting"—the practice of sending sexually explicit or nude or semi-nude photos of children by cell phone. Bills have been enacted in five states (Florida, North Dakota, Nevada, Rhode Island and Texas) and Guam so far this year.

Since 2009, when NCSL began tracking sexting legislation, at least 14 states have enacted bills to address youth sexting. In addition, the California Assembly passed a resolution in 2010, and Indiana (in 2009) and Rhode Island (in 2010) created study commissions relating to sexting.

### ALASKA

#### H.B. 127

*Status: 6/23/2011, Signed by Governor, but sexting provisions were amended out of enacted version.*

Relates to the crimes of stalking, online enticement of a minor, unlawful exploitation of a minor, endangering the welfare of a child, sending an explicit image of a minor, harassment, distribution of indecent material to minors, and misconduct involving confidential information.

#### S.B. 72

*Status: Pending; Carryover to 2012 session.*

Relates to the crimes of stalking, online enticement of a minor, unlawful exploitation of a minor, endangering the welfare of a child, sending an explicit image of a minor, harassment, distribution of indecent material to minors, and misconduct involving confidential information.

### ARKANSAS

#### S.B. 741

*Status: Failed--adjourned.*

Addresses the problem of sexting; creates the offenses of wireless communication device stalking of a child and communicating improperly using a wireless device with a minor.

### CALIFORNIA

#### A.B. 321

*Status: Pending*

Authorizes the court, if sexually explicit matter was in the possession of a minor, to order the minor to pay a fine not to exceed \$ 1,000, and to undergo counseling, with the cost of counseling to be borne by the minor's parents. Makes legislative findings and declarations regarding the problems associated with sexting.

#### A.B. 1043

*Status: Pending*

Extends the Juvenile Court's jurisdiction to also include minors who engaged in sexting images of themselves or other minors. Requires a court to order a minor who engaged in sexting to perform 24 to 40 hours of community service.

#### S.B. 916

*Status: Pending*

Expresses the intent of the Legislature to enact legislation to address the activity commonly referred to as "sexting" as it pertains to minors.

#### S.B. 919

*Status: Pending*

Amends provisions of the Interagency School Safety Demonstration Act relating to the School/Law Enforcement Partnership. Defines sexting for purposes of that act as the sending or receiving of sexually explicit pictures or video images by means of an electronic act. Requires the partnership's school safety programs to reduce sexting. Includes engaging in an act of sexting directed specifically toward a pupil or school personnel as an act for which a pupil may be suspended or expelled from school.

### FLORIDA

#### H.B. 75

*Status: 6/21/11, Signed by Governor. Chapter 2011-180.*

Provides that minor commits offense of sexting if he or she knowingly uses computer or other device to transmit or distribute photograph or video of himself or herself which depicts nudity and is harmful to minors, or knowingly possesses such photograph or video that was transmitted or distributed to minor from another minor; provides that transmission or distribution of multiple photographs or videos is single offense if such photographs and videos were transmitted or distributed in same 24-hour period; provides that possession of multiple photographs or videos that were transmitted or distributed by minor is single offense if such photographs and videos were transmitted or distributed by

minor in same 24-hour period; provides that act does not prohibit prosecution of minor for conduct relating to material that includes depiction of sexual conduct or sexual excitement or for stalking.

**S.B. 888**

*Status: Failed*

Provides that a minor commits the offense of sexting if he or she knowingly uses a computer, or any other device capable of electronic data transmission or distribution, to transmit or distribute to another minor any photograph or video of himself or herself which depicts nudity and is harmful to minors; provides noncriminal and criminal penalties.

**HAWAII**

**H.B. 573**

*Status: Pending; Carryover to 2012 session.*

Creates the misdemeanor offense of a minor electronically communicating indecent material. Creates the offense of possession of indecent material electronically communicated by a minor, which is a misdemeanor if committed by a minor and a class C felony if committed by an adult.

**S.B. 51**

*Status: Pending; Carryover to 2012 session.*

Creates the misdemeanor offense of a minor electronically communicating indecent material. Creates the offense of possession of indecent material electronically communicated by a minor, which is a misdemeanor if committed by a minor and a class C felony if committed by an adult.

**INDIANA**

**H.B. 1042**

*Status: Failed--Adjourned.*

Relates to disseminating material harmful to minors. Provides defenses to the crimes of disseminating matter that is harmful to minors, child exploitation, and possession of child pornography if a cellular telephone was used and the defendant and recipient of the matter are certain ages and meet other requirements. Provides that a school corporation may offer classes, instruction, or programs regarding the risks and consequences of creating and sharing sexually suggestive or explicit materials. Provides that discipline rules adopted by a school corporation must prohibit bullying through the use of computers, computer systems, or computer networks of a school corporation.

**S.B. 554**

*Status: Failed--Adjourned.*

Relates to disseminating material harmful to minors. Provides defenses to the crimes of disseminating matter that is harmful to minors, child exploitation, and possession of child pornography if a cellular telephone was used and the defendant and recipient of the matter are certain ages and meet other requirements. Provides that a school corporation may offer classes, instruction, or programs regarding the risks and consequences of creating and sharing sexually suggestive or explicit materials. Provides that discipline rules adopted by a school corporation must prohibit bullying through the use of computers, computer systems, or computer networks of a school corporation.

**IOWA**

**D. 1251**

Relates to child pornography and sexting.

**KANSAS**

House Substitute for **S.B. 63**

*Status: 5/25/2011, Signed by Governor, but sexting provisions were amended out of enacted version.*

Amends the crime of sexual exploitation of a child.

**MISSISSIPPI**

**H.B. 368**

*Status: Failed--Adjourned.*

Includes the storing of a visual depiction of child pornography on cell phones as a violation of exploitation of children.

**NEVADA**

**S.B. 277**

*Status: 6/3/11, Signed by Governor, Chapter 245*

Revises provisions governing certain acts by juveniles relating to the possession, transmission and distribution of certain sexual images.

**NEW JERSEY**

**A.B. 1560**

*Status: Pending.*

Requires school districts to annually disseminate information to students and parents or guardians on the dangers of distributing sexually explicit images through electronic means.

A.B. 1561

*Status: June 29, 2011. Sent to Governor.*

Creates diversionary program for juveniles who are criminally charged for "sexting" or posting sexual images.

A.B. 1562

*Status: Pending.*

Prohibits retail stores from selling cellular telephone equipment or cellular telephone equipment service contracts unless stores provide information brochures about "sexting" to customers who purchase such equipment or contracts.

S.B. 2698

*Status: Pending.*

Requires school districts to annually disseminate information to students and parents or guardians on the dangers of distributing sexually explicit images through electronic means.

S.B. 2699

*Status: Pending.*

Prohibits retail stores from selling cellular telephone equipment or cellular telephone equipment service contracts unless stores provide information brochures about sexting to customers who purchase such equipment or contracts.

S.B. 2700

*Status: Pending.*

Creates diversionary program for juveniles who are criminally charged for sexting or posting sexual images.

S.B. 2907

*Status: Pending.*

Requires public school districts to include instruction on the dangers of distributing sexually explicit images through electronic means as part of the Core Curriculum Content Standards in Comprehensive Health and Physical Education.

## **NEW YORK**

A.B. 8131

*Status: Pending*

Directs the attorney general to establish a 2 year juvenile sexting and cyberbullying education demonstration program in not less than 3 counties as a diversionary program for persons under 16 who have engaged in cyberbullying or sexting, in lieu of juvenile delinquency or criminal proceedings.

S.B. 3439

*Status: Pending.*

Relates to educating children on the harms of electronically sending and posting certain images of themselves.

## **NORTH DAKOTA**

H.B. 1371

*Status: 3/21/2011, Signed by Governor. Chapter 99.*

Relates to the creation, possession, or dissemination of sexually expressive images.

## **OHIO**

H.B. 53

*Status: Pending.*

Prohibits a minor, by use of a telecommunications device or other means, from knowingly creating, receiving, exchanging, sending, or possessing a photograph or other material showing a minor in a state of nudity.

H.B. 80

*Status: Pending.*

Prohibits a minor, by use of a telecommunications device, from knowingly sharing, exchanging, sending, or posting a photograph, video, or other material that shows a minor in a state of nudity; Defines a state of nudity for purposes of this prohibition; limits the offense of illegal use of a minor in a nudity-oriented material or performance to acts committed by persons 18 years of age or older.

## **OKLAHOMA**

H.B. 2006

*Status: Pending; Carryover to 2012 session.*

Relates to crimes and punishments; relates to solicitation of sexual conduct or communication with a minor by use of technology; includes description of text messages with certain sexual content; modifies penalty for consensual text messages between certain persons; specifies penalty for certain persons; declares an emergency.

## **OKLAHOMA**

### S.B. 677

*Status: Failed--adjourned.*

Creates a partial defense to certain sex offenses for certain juveniles and persons less than three years older than the victim. Reduces sex offense to crime of inappropriate use of sexual image. Creates the crime of inappropriate use of sexual image. Punishes by maximum of one year's imprisonment, \$6,250 fine, or both.

### S.B. 678

*Status: Failed--adjourned.*

Creates a partial defense to certain sex offenses for certain juveniles and persons less than three years older than victim. Reduces sex offense to crime of inappropriate use of sexual image or, under certain circumstances, authorizes court to impose

sentence not to exceed any otherwise applicable mandatory minimum or presumptive sentence, whichever is longer. Creates crime of inappropriate use of sexual image. Punishes by maximum of one year's imprisonment, \$6,250 fine, or both.

## **PENNSYLVANIA**

### H.B. 815

*Status: Pending.*

Amends the Crimes and Offenses Code; further provides for the offense of sexual abuse of children; defines the offense of sexting by minors.

### S.B. 850

*Status: Pending.*

Amends the Crimes and Offenses Code and the Judiciary and Judicial Procedure Code; provides for the offense of cyberbullying and sexting by minors in criminal history record information; further provides for expungement and for juvenile records in relation to summary offenses, further providing for short title and purpose of chapter, for the scope of the Juvenile Act, for inspection of court files and records, for conduct of hearings and for right to counsel.

## **RHODE ISLAND**

### H.B. 5094

*Status: 7/12/2011. Signed by Governor, Public Law 2011-270.*

Prohibits the use of a computer or other telecommunication device to transmit an indecent visual depiction of himself or herself to another person, which is commonly known as sexting, by minors; provides that any violation of this act is deemed to be a status offense and shall be referred to the family court. This act would take effect upon passage.

### H.B. 5808

*Status: Pending.*

Would create various criminal offenses relating to Internet activity. This act would take effect upon passage.

### S.B. 733

*Status: 7/12/2011. Signed by Governor, Public Law 2011-295.*

Would create various criminal offenses relating to Internet activity. This act would take effect upon passage.

## **SOUTH CAROLINA**

### H.B. 3130

*Status: Pending.*

Creates the offense of sexting; provides for a civil fine and an educational program for a person who commits the offense, provides for the restriction of a minor's driving privileges under certain circumstances, provides certain safeguards for minors who commit the offense, and provides for the use of the uniform traffic ticket for the offense and for jurisdiction over the offense in the municipal or magistrates court.

### S.B. 296

*Status: Pending.*

Creates the offense of sexting; provides for a civil fine and an educational program for a person who commits the offense, provides for the restriction of a minor's driving privileges under certain circumstances, provides certain safeguards for minors who commit the offense, and provides for the use of the uniform traffic ticket for the offense and for jurisdiction over the offense in the municipal or magistrates court.

## **SOUTH DAKOTA**

### S.B. 179

Defines and prohibits the offenses of juvenile sexting and aggravated juvenile sexting and provides for certain sanctions and remedies.

**TELEVISION**

**S.B. 407**

*Status: 6/17/11, Signed by Governor*

Relates to the creation of the offense of electronic transmission of certain visual material depicting a minor and to certain educational programs concerning the prevention and awareness of that offense.

**GUAM**

**Bill No. 41-31 (COR)**

*Status: March 8, 2011, Signed by Governor*

Relates to bullying, cyberbullying and sexting.

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## *Cruel and Unusual Punishment: The Juvenile Death Penalty* **Adolescence, Brain Development and Legal Culpability**

*"[They] frequently know the difference between right and wrong and are competent to stand trial. Because of their impairments, however, by definition they have diminished capacities to understand and process mistakes and learn from experience, to engage in logical reasoning, to control impulses, and to understand the reactions of others.... Their deficiencies do not warrant an exemption from criminal sanctions, but they do diminish their personal culpability."*

*Atkins v. Virginia, 536 U.S. 304, 318,  
122 S.Ct. 2242, 2250 (2002)*

**I**n 2002, the U.S. Supreme Court banned the execution of mentally retarded persons. This decision, *Atkins v. Virginia*, cited the underdeveloped mental capacities of those with mental retardation as a major factor behind the Justices' decision.

Adolescence is a transitional period during which a child is becoming, but is not yet, an adult. An adolescent is at a crossroads of changes where emotions, hormones, judgment, identity and the physical body are so in flux that parents and even experts struggle to fully understand.

As a society, we recognize the limitations of adolescents and, therefore, restrict their privileges to vote, serve on a jury, consume alcohol, marry, enter into contracts, and even watch movies with mature content. Each year, the United States spends billions of dollars to promote drug use prevention and sex education to protect youth at this vulnerable stage of life. When it comes to the death penalty, however, we treat them as fully functioning adults.

### **The Basics of the Human Brain**

The human brain has been called the most complex three-pound mass in the known universe. This is a well deserved reputation, for this organ contains billions of connections among its parts and governs countless actions, involuntary and voluntary, physical, mental and emotional.

The largest part of the brain is the *frontal lobe*. A small area of the frontal lobe located behind the forehead, called the *prefrontal cortex*, controls the brain's most advanced functions. This

part, often referred to as the "CEO" of the body, provides humans with advanced cognition. It allows us to prioritize thoughts, imagine, think in the abstract, anticipate consequences, plan, and control impulses.

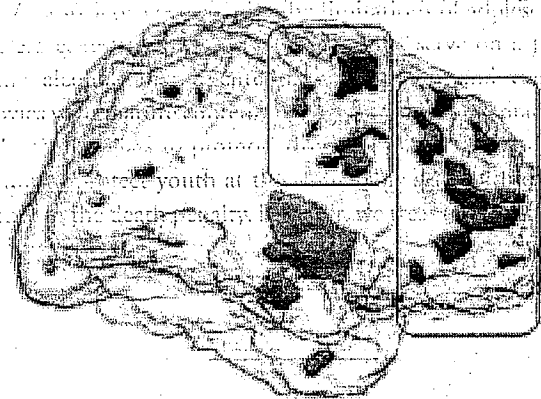
Along with everything else in the body, the brain changes significantly during adolescence. In the last five years, scientists, using new technologies, have discovered that adolescent brains are far less developed than previously believed.

### **New Technology, New Discoveries**

Scientists are now utilizing advances in magnetic resonance imaging (MRI) to create and study three-dimensional images of the brain without the use of radiation (as in an x-ray). This breakthrough allows scientists to safely scan children over many years, tracking the development of their brains.

Researchers at Harvard Medical School, the National Institute of Mental Health, UCLA, and others, are collaborating to "map" the development of the brain from childhood to adulthood and examine its implications.

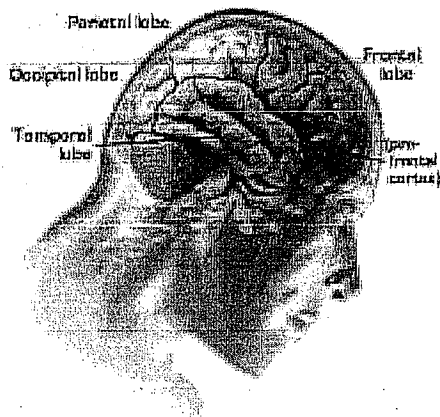
Emotions, judgment, identity and the physical body are so in flux that parents and even experts struggle to fully understand.



A three dimensional "map" showing portions of gray matter "pruned" from the brain between adolescence and adulthood. The dark portions in the two boxes indicate sections that will be discarded from the frontal lobe. The box on the far right indicates the prefrontal cortex, a subsection of the frontal lobe that controls judgment.

Image adapted from *Nature Neuroscience*.

## Lobes of the Brain:



©2002 Hybrid Medical Animation

The scientists, to their surprise, discovered that the teenage brain undergoes an intense overproduction of *gray matter* (the brain tissue that does the “thinking”). Then a period of “pruning” takes over, during which the brain discards gray matter at a rapid rate.<sup>2</sup> This process is similar to pruning a tree: cutting back branches stimulates health and growth.

In the brain, pruning is accompanied by *myelination*, a process in which *white matter* develops. White matter is fatty tissue that serves as insulation for the brain’s circuitry, making the brain’s operation more precise and efficient.<sup>3</sup>

Researchers have carefully scrutinized the pace and severity of these changes and have learned that they continue into a person’s early 20s. Dr. Elizabeth Sowell, a member of the UCLA brain research team, has led studies of brain development from adolescence to adulthood. She and her colleagues found that the frontal lobe undergoes far more change during adolescence than at any other stage of life.<sup>4</sup> It is also the last part of the brain to develop, which means that even as they become fully capable in other areas, adolescents cannot reason as well as adults: “[m]aturation, particularly in the frontal lobes, has been shown to correlate with measures of cognitive functioning.”<sup>5</sup>

## Biology and Behavior

Jay Giedd, a researcher at the National Institute of Mental Health, explains that during adolescence the “part of the brain that is helping organization, planning and strategizing is not done being built yet.... It’s sort of unfair to expect [adolescents] to have adult levels of organizational skills or decision making before their brain is finished being built.”<sup>6</sup>

Dr. Deborah Yurgelun-Todd of Harvard Medical School has studied the relation between these new findings and teen behavior and concluded that adolescents often rely on emotional parts

of the brain, rather than the frontal lobe. She explains, “one of the things that teenagers seem to do is to respond more strongly with gut response than they do with evaluating the consequences of what they’re doing.”<sup>7</sup>

Also, appearances may be deceiving: “Just because they’re physically mature, they may not appreciate the consequences or weigh information the same way as adults do. So we may be mistaken if we think that [although] somebody looks physically mature, their brain may in fact not be mature.”<sup>8</sup>

This discovery gives us a new understanding into juvenile delinquency. The frontal lobe is “involved in behavioral facets germane to many aspects of criminal culpability,”<sup>9</sup> explains Dr. Ruben C. Gur, neuropsychologist and Director of the Brain Behavior Laboratory at the University of Pennsylvania. “Perhaps most relevant is the involvement of these brain regions in the control of aggression and other impulses.... If the neural substrates of these behaviors have not reached maturity before adulthood, it is unreasonable to expect the behaviors themselves to reflect mature thought processes.

“The evidence now is strong that the brain does not cease to mature until the early 20s in those relevant parts that govern impulsivity, judgment, planning for the future, foresight of consequences, and other characteristics that make people morally culpable.... Indeed, age 21 or 22 would be closer to the ‘biological’ age of maturity.”<sup>10</sup>

## Other Changes in the Body

In addition to the profound physical changes of the brain, adolescents also undergo dramatic hormonal and emotional changes. One of the hormones which has the most dramatic effect on the body is testosterone. Testosterone, which is closely associated with aggression, increases tenfold in adolescent boys.<sup>11</sup>

**“Just because they’re physically mature, they may not appreciate the consequences or weigh information the same way as adults do. So, [although] somebody looks physically mature, their brain may in fact not be mature.”**

Deborah Yurgelun-Todd, PhD  
Brain Imaging Laboratory,  
McClean Hospital  
Harvard University Medical School

Emotionally, an adolescent “is really both part child and part adult,”<sup>12</sup> explains Melvin Lewis, an expert in child psychiatry and pediatrics at Yale University School of Medicine. Normal development at this time includes self-searching, during which the adolescent tries to grow out of his or her childlike self. This change is complicated by the conflict between an adolescent’s new sense of adult identity and remaining juvenile insecurities.

The behaviors associated with this process include self-absorption, a need for privacy, mood swings, unique dress, and escapism, such as video games, music, and talking on the phone, as well as riskier behaviors, such as drug use or sexual activity.<sup>13</sup>

## Childhood Abuse and Violence

In addition to this context of change and volatility, research shows that abusive childhood experiences can trigger violent behavior. The American Academy of Pediatrics has identified several risk factors that can spark violence in adolescents, including being witness to domestic violence or substance abuse within the family, being poorly or inappropriately supervised, and being the victim of physical or sexual assault.<sup>14</sup>

Researcher Phyllis L. Crocker of Cleveland-Marshall College of Law has written that "the nexus between poverty, childhood abuse and neglect, social and emotional dysfunction, alcohol and drug abuse and crime is so tight in the lives of many capital defendants as to form a kind of social historical profile."<sup>15</sup>

**"The evidence now is strong that the brain does not cease to mature until the early 20s in those relevant parts that govern impulsivity, judgment, planning for the future, foresight of consequences, and other characteristics that make people morally culpable...."**

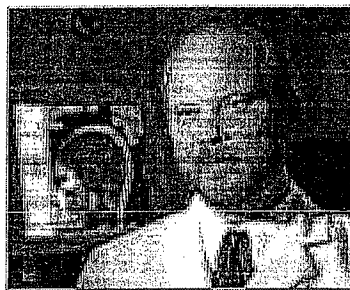
Ruben Gur, MD, PhD  
Director, University of  
Pennsylvania Medical Center

Dr. Chris Mallett, Public Policy Director at Bellefaire Jewish Children's Bureau in Ohio, recently completed the most comprehensive study of traumatic experiences in the lives of death row juvenile offenders to date.<sup>16</sup> He found that:

- 74% experienced family dysfunction<sup>17</sup>
- 60% were victims of abuse and/or neglect<sup>18</sup>
- 43% had a diagnosed psychiatric disorder<sup>19</sup>
- 38% suffered from substance addictions<sup>20</sup>
- 38% lived in poverty<sup>21</sup>

More than 30% of death row juvenile offenders had experienced six or more distinct areas of childhood trauma with an overall average of four such experiences per offender. Most children and adolescents do not face even one of these defined areas of difficulty.<sup>22</sup> Mallett also found that such mitigating evidence was presented to juries in fewer than half of the offenders' trials.<sup>23</sup>

Mallett's research confirmed findings in previous studies. In 1992, researchers found that two-thirds of all juveniles sentenced to death had backgrounds of abuse, psychological disorders, low IQ, indigence, and/or substance abuse.<sup>24</sup>



Dr. Jay Giedd of the National Institute of Mental Health. Image courtesy of PBS Frontline report *Inside the Teenage Brain*.

In 1987, an investigation into 14 juveniles on death row<sup>25</sup> (40% of the total at the time) revealed that nine had major neuropsychological disorders<sup>26</sup> and seven had psychotic disorders since early childhood.<sup>27</sup> All but two had IQ scores under 90.<sup>28</sup> Only three had average reading abilities, and another three had learned to read only after arriving on death row.<sup>29</sup> Twelve reported having been physically or sexually abused, including five who were sodomized by relatives.<sup>30</sup>

## Delinquency Link

The turmoil often associated with adolescence can result in poor decisions and desperate behaviors. For example, studies have found that 20 to 30% of high school students consider suicide. Suicide is the third-leading cause of death among teenagers, occurring once every two hours, or over 4,000 times a year, according to the U.S. Surgeon General.<sup>31</sup> Approximately 30% of youths reported using an illicit drug at least once during their lifetime, and 22.2% reported using an illicit drug within the past year.<sup>32</sup>

## Conclusion

New discoveries provide scientific confirmation that the teen years are a time of significant transition. They shed light on the mysteries of adolescence and demonstrate that adolescents have significant neurological deficiencies that result in stark limitations of judgment. Research suggests that when compounded with risk factors (neglect, abuse, poverty, etc.), these limitations can set the psychological stage for violence.

These discoveries support the assertion that adolescents are less morally culpable for their actions than competent adults and are more capable of change and rehabilitation. The ultimate punishment for minors is contrary to the idea of fairness in our justice system, which accords the greatest punishments to the most blameworthy.

This fresh understanding of adolescence does not excuse juvenile offenders from punishment for violent crime, but it clearly lessens their culpability. This concept is not new; it is why we refer to those under 18 as "minors" and "juveniles"—because, in so many respects, they are *less than adult*.

# American Bar Association Juvenile Justice Center

NOTES

<sup>1</sup> For an excellent overview, see Elkhonon Goldberg, *The Executive Brain: Frontal Lobes and the Civilized Mind*, Oxford University Press (2001).

<sup>2</sup> Sowell, Elizabeth R, Paul M. Thompson, Colin J. Holems, Terry L. Jernigan and Arthur W. Toga. *In vivo evidence for post-adolescent brain maturation in frontal and striatal regions*. 2 *Nature Neuroscience* 10 (1999), also Paus, Tomas, Jay Giedd, et. al. *Structural maturation of neural pathways in children and adolescents: in vivo study*. *Science*, 283 (1999).

<sup>3</sup> *Id.*

<sup>4</sup> *Id.*

<sup>5</sup> Sowell, Elizabeth R, Paul M. Thompson, Kevin D. Tessner and Arthur W. Toga. *Mapping continued brain growth and gray matter density reduction in dorsal frontal cortex: inverse relationships during postadolescent brain maturation*, 21 *Journal of Neuroscience* 22 (2001), at 8819, also Reiss, A.L., et. al., *Brain development, gender and IQ in children, a volumetric imaging study*. *Brain*, 119 (1996).

<sup>6</sup> PBS Frontline, *Inside the Teen Brain*. See *Interview with Jay Giedd*, online at [www.pbs.org/wgbh/pages/frontline/shows/teenbrain/](http://www.pbs.org/wgbh/pages/frontline/shows/teenbrain/).

<sup>7</sup> *Id.*, at *Interview with Deborah Yurghun-Todd*.

<sup>8</sup> *Id.*

<sup>9</sup> Gur, Ruben C. Declaration of Ruben C. Gur., PhD, *Patterson v. Texas*. Petition for Writ of Certiorari to US Supreme Court, J. Gary Hart, Counsel. (Online at: [www.abanet.org/crimjust/juvjus/patterson.html](http://www.abanet.org/crimjust/juvjus/patterson.html))

<sup>10</sup> *Id.*

<sup>11</sup> See Adams, Gerald R., Raymond Montemayor, and Thomas P. Gullora, eds. *Psychosocial Development during Adolescence*. Thousand Oaks, CA, Sage Publications (1996).

<sup>12</sup> Lewis, Melvin. *Child and Adolescent Psychiatry: A comprehensive textbook*, Lippincott Williams and Wilkins (2002).

<sup>13</sup> See *id.*, and Cobb, Nancy J. *Adolescence: Continuity, Change and Diversity*. Mayfield Publishing, CA (1998).

<sup>14</sup> American Society of Pediatrics, *Policy Statement*, 1 *Pediatrics*, 103 (1999).

<sup>15</sup> Phyllis L. Crocker. *Childhood Abuse and Adult Murder: Implications for the Death Penalty*, 77 *NC L. Rev.* 1143 (1999).

<sup>16</sup> Mallett, Chris. *Socio-Historical Analysis of Juvenile Offenders on Death Row*, 3 *Juv. Corr. Mental Health Report* 65 (2003).

<sup>17</sup> *Id.*, at 77.

<sup>18</sup> *Id.*, at 78.

<sup>19</sup> *Id.*, at 77.

<sup>20</sup> *Id.*, at 78.

<sup>21</sup> *Id.*

<sup>22</sup> *Id.*

<sup>23</sup> *Id.*

<sup>24</sup> Robinson, DA and Stephens, OH; *Patterns of mitigating factors in juvenile death penalty cases*, 3 *Criminal Law Bulletin* 28 (1992).

<sup>25</sup> Lewis, DO, Pincus, Bard, Richardson, Prichep, Feldman, Yeager. *Neuropsychiatric, psychoeducational, and family characteristics of 14 juveniles condemned to death in the United States*, 5 *Am. J. of Psychiatry* 145 (1988).

<sup>26</sup> *Id.*

<sup>27</sup> *Id.*

<sup>28</sup> *Id.*

<sup>29</sup> *Id.*

<sup>30</sup> *Id.*

<sup>31</sup> Office of the U.S. Surgeon General, *At a Glance, Suicide Among the Young*. Online at: [www.surgeongeneral.gov/library/calltoaction/fact3.htm](http://www.surgeongeneral.gov/library/calltoaction/fact3.htm)

<sup>32</sup> White House Office of National Drug Control Policy, *Juveniles and Drugs*, at [www.whitehousedrugpolicy.gov/drugfact/juveniles/index.html](http://www.whitehousedrugpolicy.gov/drugfact/juveniles/index.html)

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Defending Liberty  
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# RESEARCH

# FACTS and FINDINGS

A collaboration of Cornell University, University of Rochester, and the NYS Center for School Safety

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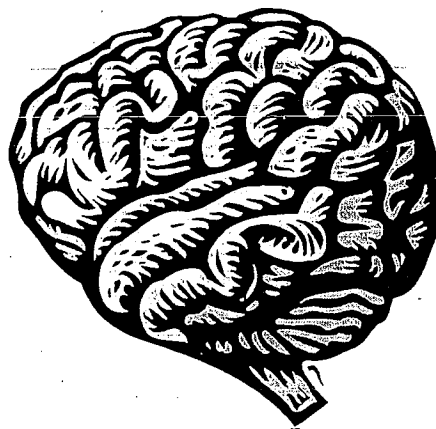
## Adolescent Brain Development

Research now supports what parents have *long* suspected—that the teenager's brain is different than the adult brain. Recent research by scientists at the National Institute of Mental Health (NIMH) using magnetic resonance imaging (MRI) has found that the teen brain is not a finished product, but is a work in progress. Until recently most scientists believed that the major "wiring" of the brain was completed by as early as three years of age and that the brain was fully mature by the age of 10 or 12. New findings show that the greatest changes to the parts of the brain that are responsible for functions such as self-control, judgment, emotions, and organization occur between puberty and adulthood. This may help to explain certain teenage behavior that adults can find mystifying, such as poor decision-making, recklessness, and emotional outbursts.

*The brain is still developing during the teen years* Dr. Jay Giedd of the NIMH has reported that brain "maturation does not stop at age 10, but continues into the teen years and even into the 20's. What is most surprising is that you get a second wave of overproducing of gray matter, something that was thought to happen only in the first 18 months of life (Begley, 2000)." Following the overproduction of gray matter, the brain undergoes a process called "pruning" where connections among neurons in the brain that are not used wither away, while those that are used stay—the "use it or lose it" principle. It is thought that this pruning process makes the brain more efficient by strengthening the connections that are used most often, and eliminating the clutter of those that are not used at all.

*What does this mean for teens?* According to Dr. Giedd, this is exciting news for teens. "...unlike infants whose brain activity is completely determined by their parents and environment, the teens may actually be able to control how their own brains are wired and sculpted." Kids who "exercise" their brains by learning to order their thoughts, understand abstract concepts, and control their impulses are laying the neural foundations that will serve them for the rest of their lives. "This argues for doing a lot of things as a teenager," says Dr. Giedd. "You are hard-wiring your brain in adolescence. Do you want to hard-wire it for sports and playing music and doing mathematics—or for lying on the couch in front of the television?"

*Alcohol use and the developing teen brain* Recent research suggests that alcohol use affects adolescents and adults differently, which makes sense given what we now know about the changes going on in the teen brain. While more research needs to be done in this area, Duke University scientists say "the available research suggests that adolescents are more vulnerable than adults to the affects of alcohol on learning and memory (White, 2001). Not only do they react differently to the initial affects of alcohol, studies suggest that teens who repeatedly use alcohol can suffer long-term effects. Preliminary studies using rats have shown that those with repeated alcohol exposure during adolescence are more sensitive to alcohol-induced impairments later in life (White, 2001).



Research on humans by Brown, et al. (2000) has shown the first concrete evidence that heavy, on-going alcohol use by adolescents can impair brain functioning. Brown's research on 15 and 16 year olds showed cognitive impairments in teen alcohol abusers, compared with non-abusing peers, even weeks after they stop drinking. This suggests that abuse of alcohol by teens may have long-term negative effects on the make up of their brains.

*Teens and understanding emotions* Teens also differ from adults in their ability to read and understand emotions in the faces of others. Recent research shows that teens and adults actually use different regions of the brain in responding to certain tasks. In a study conducted at Boston's McLean Hospital, psychologist Deborah Yurgelun-Todd and colleagues showed pictures of people wearing fearful expressions to teenagers between the ages of 11 and 17 while the teens had their brains scanned using functional magnetic resonance imaging (fMRI). She found that compared to adults, the teens' frontal lobes (the seat of goal-oriented rational thinking) are less active and their amygdala (a structure in the temporal lobe that is involved in discriminating fear and other emotions) is more active. The teens often misread facial expressions, with those under the age of 14 more often seeing sadness or anger or confusion instead of fear. Older teenagers answered correctly more often and exhibited a progressive shift of activity from the amygdala to the frontal lobes. The results suggest that in teens, the judgment, insight and reasoning

### Brain Regions and functions

**Frontal lobe**—self-control, judgment, emotional regulation; restructured in teen years

**Corpus callosum**—intelligence, consciousness and self-awareness; reaches full maturity in 20's

**Parietal lobes**—integrate auditory, visual, and tactile signals; immature until age 16

**Temporal lobes**—emotional maturity; still developing after age 16

power of the frontal cortex is not being brought to bear on the task as it is in adults. Teens just process information differently from adults. (Yurgelun-Todd, 2002)"

*Implications* It is important to note that experts caution careful interpretation of this new information about adolescent brain development, as it is still very early in the analysis and understanding of what it all means. Yet it is also true that these findings add new dimensions to issues facing young people, as well as their parents and teachers, and they pose a challenge to policy makers (NIH, 2000). If the choices adolescents make about using drugs and alcohol and engaging in or avoiding challenging learning tasks have long-term and irreversible consequences for the development of their brains, then discouraging harmful choices and encouraging healthy ones is all the more urgent. This new research may also provide a compelling explanation for why adolescents often fail to heed adults' warnings about such choices; they may simply not be able to understand and accept arguments that seem logical and decisive to adults. It is also possible that teens are misperceiving or misunderstanding the emotions of adults, leading to miscommunication both in terms of what the teen thinks the adult is feeling and in terms of the teen's response.

Perhaps most importantly, teenagers are empowered with opportunities to develop their brains through the activities in which they choose to participate.

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