The Teenage Brain: Nature & Nurture, Neuroscience & ACEs

> ***"[T]he brain of an adolescent is nothing short of a paradox. It has an overabundance of gray matter (the neurons that form the basic building blocks of the brain) and an undersupply of white matter (the connective wiring that helps information flow efficiently from one part of the brain to the other) – which is why the teenage brain is almost like a brand-new Ferrari: it's primed and pumped but it hasn't been road tested yet. In other words, it's all revved up but doesn't quite know where to go. This paradox has led to a kind of cultural mixed message. We assume when someone looks like an adult that he or she must be one mentally as well. Adolescent boys shave and teenage girls can get pregnant, and yet neurologically neither one has a brain ready for prime time in the adult world."***
>
> – Dr. Frances Jensen, *A Neuroscientist's Survival Guide to Raising Adolescents and Young Adults* (2015) at 27-28.

1. Brain Maturity

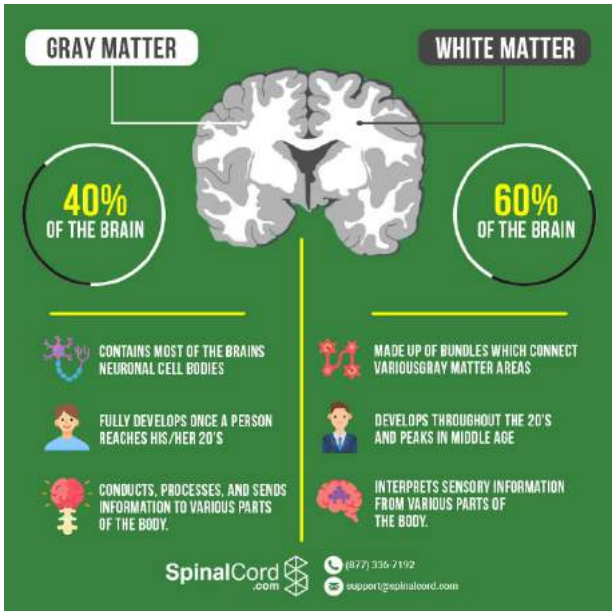
As explained above, the teenage brain works through connectivity. It is composed of:

Gray Matter (Neurons)

Gray matter is the cells called "neurons" that are unique to the nervous system and make possible thought, perception, motion, and control of bodily functions.

White Matter (Myelin)

White matter is the whitish fatty proteins that sheathe the axon fibers connecting nerve cells called "myelin". It is essential for the transmission of information via nerve cells.



Connectivity through Myelinated Axon Fibers:

Communication: Brain regions communicate with each other via the myelinated axon fibers, the myelin being like insulation on an electrical wire, greatly increasing the speed at which impulses are transmitted from cell to cell and region to region. This connectivity governs how well brain regions work together and relates to growth in intellectual abilities. Brain regions that are wired together fire together. The National Institute of Mental Health describes this connectivity as "a little like providing a growing city with a fast, integrated communication system."

Pre-frontal cortex: The myelination process that starts at the back of the brain and moves very slowly toward the front, at last reaches the pre-frontal cortex, which is the seat of executive function. This is the area that enables and controls decision making, understanding the long-term consequences of our actions, insight, judgment, and impulse control.

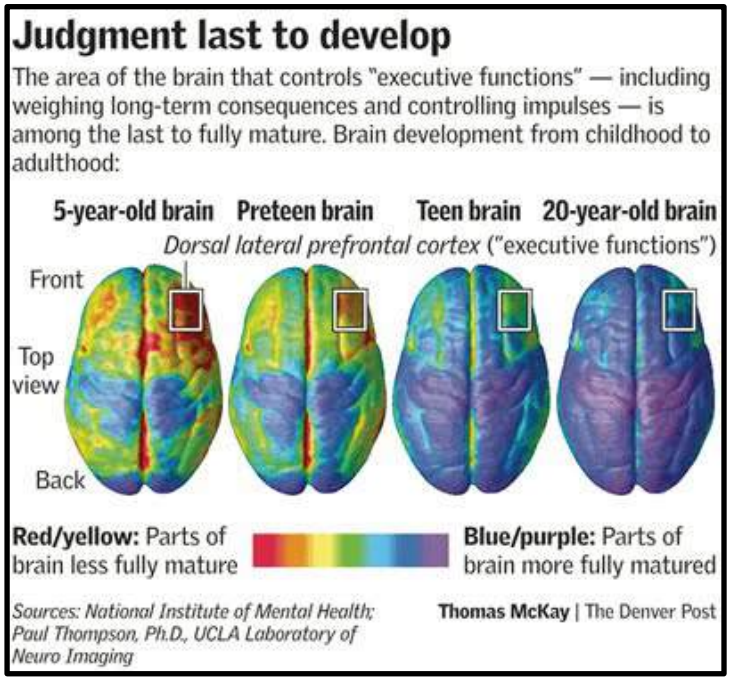
How do we know this? The Advances created by fMRI

Functional magnetic resonance imaging (fMRI): The advent of fMRI made it possible to see not only the structures in the brain, but also how brain regions connect and how the brain functions in real time

Click here for more information about fMRI

"[T]he teen brain is only about 80 percent of the way to maturity. That 20 percent gap, where the wiring is thinnest, is crucial and goes a long way toward explaining why teenagers' behave in such puzzling ways – their mood swings, irritability, impulsiveness and explosiveness; their inability to focus, to follow through, and to connect with adults; their temptations to use drugs and alcohol and to engage in other risky behavior. When we think of ourselves as civilized, intelligent adults, we really have the frontal and prefrontal parts of the cortex to thank."

Dr. Frances Jensen, A Neuroscientist's Survival Guide to Raising Adolescents and Young Adults (2015) p.37



2. Risk- Taking and Reaction Times for Teens

Teens cf. Adults

A brain scan experiment at Dartmouth College illustrates slow development of the myelination process with respect to risk-taking. The formed frontal lobes of the brain connect to the rest of the brain through myelination, controlling one's ability to reason and make judgments, as well as impulse control. Researchers scanned adults' and adolescents' brains while the subjects responded to questions about a risky activity.[1]

Question: Should you light your hair on fire?

ADULTS

Reaction: Nearly automatic images of the danger appears leading to a visceral rapid response.

Brain: The need to make a judgment activates the frontal lobe, recognizes danger, and quickly communicates to the rest of the brain to respond.

TEENS

Reaction: Response Time was $\frac{1}{6}$th of a second longer than for adults. Rather than an automatic response, teens had to pause and reason through their answer.

Brain: The frontal lobe is still under construction & its connection through myelin to the rest of the brain is significantly slower than in adult brains.

Teens cf. Children

The Go/No-Go task is a widely used research instrument[2] used to study behavior regulation (i.e., impulsiveness). Children and teens were directed to press a button when a certain letter or picture appeared and to do nothing when the letter X appeared. Their reactions were as follows:

Task: Go/No Go!

CHILDREN

Reaction: Children give into their impulse to push the button when X appears more often.
Accuracy: Children have similar accuracy scores overall

TEENS

Reaction: Teens more often resisted impulse due to development of cognitive control.
Accuracy: Accuracy scores were similar overall, meaning teens and children's response inhibitions are similar

3. Dopamine and the Allure of Reward

Dopamine

- Dopamine is one of the brain's neurotransmitters – chemicals that transmit information between neurons. It enables us to both see the possibility that an action will produce a reward, and then act to secure that reward.
- As part of the reward system, dopamine promotes pleasurable feelings, which is why it is involved in addiction.

Dopamine rises during adolescence, leading teens to seek out novelty and excitement.

- Impulsivity is usually due to teens' lack of access to their pre-frontal cortex executive function.
- Hyperrationality is how the teen brain sometimes evaluates potential consequences in situations where the teen grasps the facts and risks of a situation but ignores the context.
- Teen brains' evaluation criteria sometimes put more weight on the exciting potential benefits of an action as opposed to the realistic outcomes.

Case Study in Teen Thinking and Hyperrationality:

Context: Dr. Siegel provides an example of hyperrationality through the thinking of a 17-year old patient. She knew that her school had a zero tolerance policy for alcohol at school-related functions, but nonetheless brought hard liquor to a party hosted by her school director's daughter. His patient pressed others to drink and became so drunk herself that she had to have her stomach pumped. The school expelled her.

Teen's Awareness: When asked what she thought might happen after the party when she knew the school's zero tolerance rule, she said, "Well, I *did* think about it. I knew what might happen, I guess, but the fun of getting completely smashed at the director's own house just seemed like too much to turn down."

"As teens we are often not oblivious to the negative consequences of our actions. Instead, even though the negative consequences – the cons – are fully known, we place more emphasis on the potential positive aspects – the PROS – of an experience; the thrill, the shared experience, the fun, the excitement of breaking the rules. That emphasis on the positive we now know, is a result of the shifts in the brain's structure and function during the adolescent period."

- Dr. Daniel J. Siegel, *Brainstorm: The Power and Purpose of the Teenage Brain* (2013, 2015) p.66

4. Adverse Childhood Experiences (ACEs)

"When I was a kid, you know, when I talked back, when I did something wrong, I got hit, you know…I got beat, so that's the only thing I know. That's my really big problem."

- Teddy, 21 years old,
Lauren Justice, 'What Would I have Done if I Would Have Killed Her That Night?',
New York Times, , https://www.nytimes.com/2019/03/02/opinion/sunday/women-men-abuse.html

What Are ACEs?

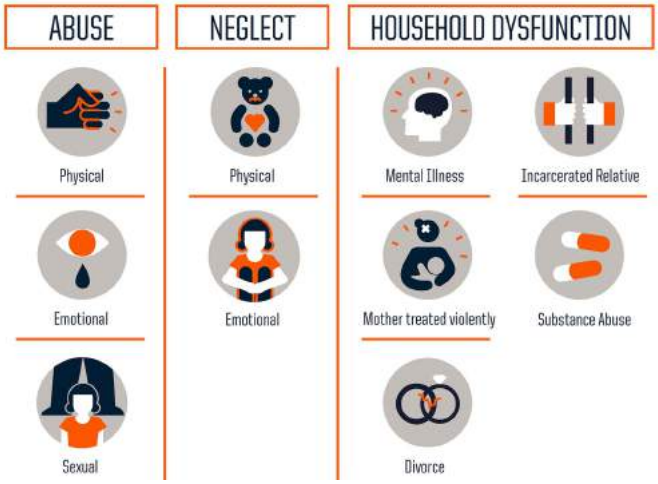
The Adverse Childhood Experiences Study (ACEs) explains how crucial children's experiences inside and outside the home are to their lifelong mental, physical and emotional health and behavior. Neuroscience explains why exposure has a profound impact on children's developing brains. ACEs have important implications for both victims and perpetrators of teen dating abuse and violence. Domestic violence is learned behavior, learned in the home. For more detailed information on ACEs, go to the Center for Disease Control and Prevention website at https://www.cdc.gov/violenceprevention/aces/index.html & ACEs Aware at https://www.acesaware.org/heal/resources/

How did we start looking into childhood trauma?

- Dr. Vincent J. Felitti, Chief of Preventative Medicine, Kaiser Permanente and Co-Principal Investigator, Adverse Childhood Experiences (ACE) Study unexpectedly found a relationship between obesity and childhood sexual abuse when interviewing dropouts from a weight loss study. He asked a patient, "How much did you weigh when you became sexually active?" She replied, "Forty pounds. It was when I was four years old, with my father."
- Following this, he focused further on incest cases and found that 56% of his 186 obesity patients reported childhood sexual abuse.
- This led him to work with Dr. Robert Anda of the Center for Disease Control to create the ACE Study, first conducted from 1995-1997.

What did the study look like?

It consists of 10 questions about witnessing or experiencing three types of exposure: abuse, neglect, and household dysfunction. Here is a table[3] outlining examples for these three types:



The ACEs Questionnaire

People completing the ACEs questionnaire receive one point for each type of childhood adversity they experienced. For example, the first question is:

While you were growing up, during your first 18 years of life:

1. Did a parent or other adult in the household often or very often… Swear at you, insult you, put you down, or humiliate you? or Act in a way that made you afraid that you might be physically hurt? **If yes enter 1**

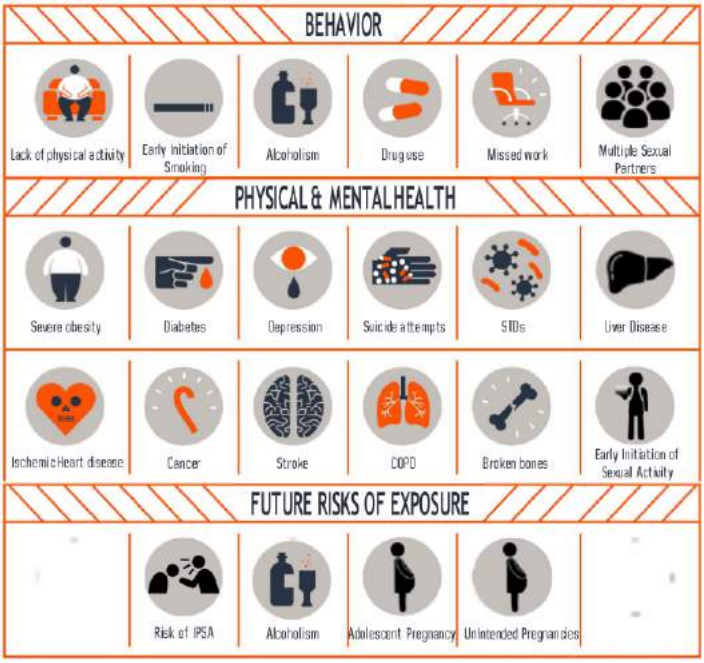
Click here for the original 10 questions retrieved from https://www.ncjfcj.org/wp-content/uploads/2006/10/Finding-Your-Ace-Score.pdf:

Effects of ACEs

Health Results: Adults raised in stressful or dysfunctional household environments, such as those where domestic violence, childhood abuse and other forms of adversity were being perpetrated, generated higher levels of the stress hormone cortisol.

What does this mean: Prolonged exposure to cortisol can damage the cardiovascular system and cause other mental and physical health disorders such as depression, hypertension, heart disease, asthma and obesity across the lifespan. ACEs has implications for public health and society as well as the individual.

The table[3] below shows the different effects ACEs can have:



Which communities do ACEs impact the most?[4]

61% of black children and **51%** of Hispanic children have experienced at least one ACE, compared to **40%** of white children.[4]

People with low income and limited education:

- **Community Environment:** ACEs are the result of not only situations children face within their own homes or families but the general circumstances in which they live. Families with low income and limited education are more likely to live in neighborhoods with high rate of unemployment, few educational opportunities, a strong gang presence, and high rates of domestic violence.
- **Cumulative Impact:** Because the impact of ACEs is cumulative, we see high rates in areas where several detrimental situations like those listed above are occurring simultaneously.
- **Systemic Racism and Intergenerational Trauma:** Communities of color, especially BIPOC, are disproportionately in precarious socio-economic situations because of systemic racism, intergenerational trauma, and inescapable cycles of poverty.

LGBTQIA2S+ and Childhood Trauma:

- According to many studies, including one published by the US National Library of Medicine[5], people from the LGBTQIA2S+ community experience childhood trauma at dramatically higher rates than non-LGBTQIA2S+ people. This is likely the result of lack of understanding among family members, the taboo of discussing these issues in some communities, and the stigma often imposed by society at large.

5. Epidemiology & Neurology

ACEs & Social Epidemiology:

Social Epidemiology is a quantitative discipline which acts essentially as a statistical tool-box to analyze the association between socioeconomic variables and health outcomes. **The ACEs study is a form of social epidemiology.**

Impact of Domestic Abuse on Children:

- Social science research amassed over the last few decades documents the many ways exposure to domestic violence undermines children's mental and physical health, social and emotional development, and interpersonal relationships, as well as the fact that it is often intergenerational.
- Exposure to domestic violence can lead to behaviors, mental and physical health risks and future risks as listed above in the ACEs section.

Social Science Research:

"At its most basic level, living with the abuse of their [parent] is to be considered a form of emotional abuse, with negative implications for children's emotional and mental health and future relationships. . . . Growing up in an abusive home can critically jeopardize the developmental progress and personal ability of children, the cumulative effect of which may be carried into adulthood and can contribute significantly to the cycle of adversity and violence. Exposure to domestic violence may have a varied impact at different stages with early and prolonged exposure potentially creating more severe problems because it affects the subsequent chain of development."

Stephanie Holt, Helen Buckley & Sadhbh Whelan, The Impact of Exposure to Domestic Violence on Children and Young People: A Review of the Literature, 32 Child Abuse & Neglect 797,799, 802 (2008)

The "What" & the "Why" in relation to ACEs and Domestic Violence:

"The convergence of evidence from neurobiology and epidemiology calls for an integrated perspective on the origins of health and social problems through the lifespan."

Robert F. Anda et al., *The Enduring Effects of Abuse and Related Adverse Experiences in Childhood*, 256 Eur Arch Psychiatry Clin Neurosci. 174, 182 (2006), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3232061/pdf/nihms340170.pdf.

Neurobiology:

Neuroscience tells us ***why*** children are so negatively impacted by exposure to domestic violence. It explains how growing up in fear bathes the highly plastic developing brain in stress hormones that literally shape brain structures and circuits.

Epidemiology:

Social science research tells us ***what*** domestic violence exposure does to children's development.

Developing Brains & Exposure to Domestic Violence

One question on the ACEs questionnaire is specifically about childhood exposure to domestic violence:

- Was your mother or stepmother: Often or very often pushed, grabbed, slapped, or had something thrown at her? or Sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard? or Ever repeatedly hit over at least a few minutes or threatened with a gun or knife?*

Unfortunately there is still a widespread belief that if the child was not directly, physically abused, *exposure* to parental domestic violence does no harm. We now know conclusively that childhood exposure to domestic violence has profound consequences, literally shaping the child's brain.

Click here to read Lynn Hecht Schafran, *Domestic Violence, Developing Brains and the Lifespan: New Knowledge from Neuroscience*, The Judges' Journal, Volume 53, Number 3, Summer 2014

6. Toxic Stress Chain

Environments' Effect on Toxic Stress

- In a safe environment where children have a nurturing relationship with a caregiver, the **moderate stress** they experience is coped with in healthy ways, producing resilience. Children learn to deal with everyday stress.
- In an environment that is constantly unsafe, children can develop **toxic stress**, which can lead to long-term negative effects.

Toxic Stress

What is Toxic Stress?: An excessive or prolonged/ long-lasting activation of stress response systems in the body and brain, which can also lead to a wear-and-tear effect on the body.[6]

What causes toxic stress?: Strong, frequent, and/or prolonged adversity—such as exposure to violence—without adequate adult support or buffering protection over a period of time throughout childhood. Continued exposure to ACEs can lead to toxic stress.

Toxic Stress and Academic Performance: Toxic stress effects a child's levels of retention:

Calm Child: can focus on the words of the teacher and, using neocortex, engage in abstract cognition

Child in Alarm State: less efficient at processing and storing the verbal information the teacher is providing.

Children who experience toxic stress are:

- twice as likely to be suspended, and three times as likely to be expelled
- 35 to 47 % more likely to be placed in special education

Only about 65% of youth in foster care graduate from high school, and only between 3% and 10% graduate from college."[7]

Alarm State[8]

What is the Alarm State? An adaptive response to prolonged chaos, unpredictability, threat, and distress, often in the form of dissociation. It leaves the person in an alarm state constantly on high alert, leaving their body in a constant state of heightened arousal, even when no external threat or demand is present.

What causes the Alarm State? Long-term exposure to ACEs and toxic stress

What are the effects?: The very adaptive responses that help the child survive and cope in a chaotic and unpredictable environment put the child at a disadvantage when outside that context.

"When a stressor arises, perhaps an argument with a peer or a demanding school task, they can escalate to a state of fear very quickly."

Dr. Bruce Perry, "Maltreatment and the Developing Child: How Early Childhood Experience Shapes Child and Culture," *Reactivity,* retrieved from http://www.lfcc.on.ca/mccain/perry.pdf

Fear Conditioning[8]

What is Fear Conditioning? The effect of fear on children in a state of fear for information retrieval:

State of calm: Use of the higher, more complex parts of our brain to process and act on information.

State of fear: Use of the lower, more primitive parts of our brain. As perceived threat levels go up, responses become less thoughtful, more reactive, governed by emotional and reactive thinking styles.

What are the effects? Repetitive activation of the stress response systems alters one's baseline state of arousal. The traumatized child lives in an aroused state, ill-prepared to learn from social, emotional, and other life experiences. Gradually, even neutral stimuli elicit fear. The child is living in the minute. Alcohol and other drugs magnify the effect.

7. The Impact of Stress on Teen Brains

Teen Stress

Teens' response to stress hormones is different than for adults. For example the stress hormone THP calms adults but ratchets up anxiety in teens.

Teen Memory

Long-term elevation of cortisol shrinks the hippocampus, the part of the brain where memories are stored. This undermines learning, school performance, and lifetime earning capacity.

Teen Risk-Taking

As shown in the Teens v. Adults section, teens have a reduced self-regulatory competence because of their undeveloped frontal lobe and slow connectivity.

Teen Brains and Exposure to TDAV

TDAV leads to severe or prolonged stress, leaving victims more susceptible to developing PTSD than adults.

Teens are also less likely to have developed adaptive coping mechanisms, leading them to maladaptive coping mechanisms at an early age such as self-medication self-harm, addictions of all kinds – alcohol, cigarettes, drugs, texting. These all take a tenacious hold on the teenage brain.

Teen Emotions

Emotional self-regulation depends on various subcategories of executive functioning skills that are still developing in teen brains, leading them to more emotional highs and lows.

Dysregulated emotions lead to poor impulse control, worsening the issues mentioned in relation to Risk-Taking.

8. Resilience

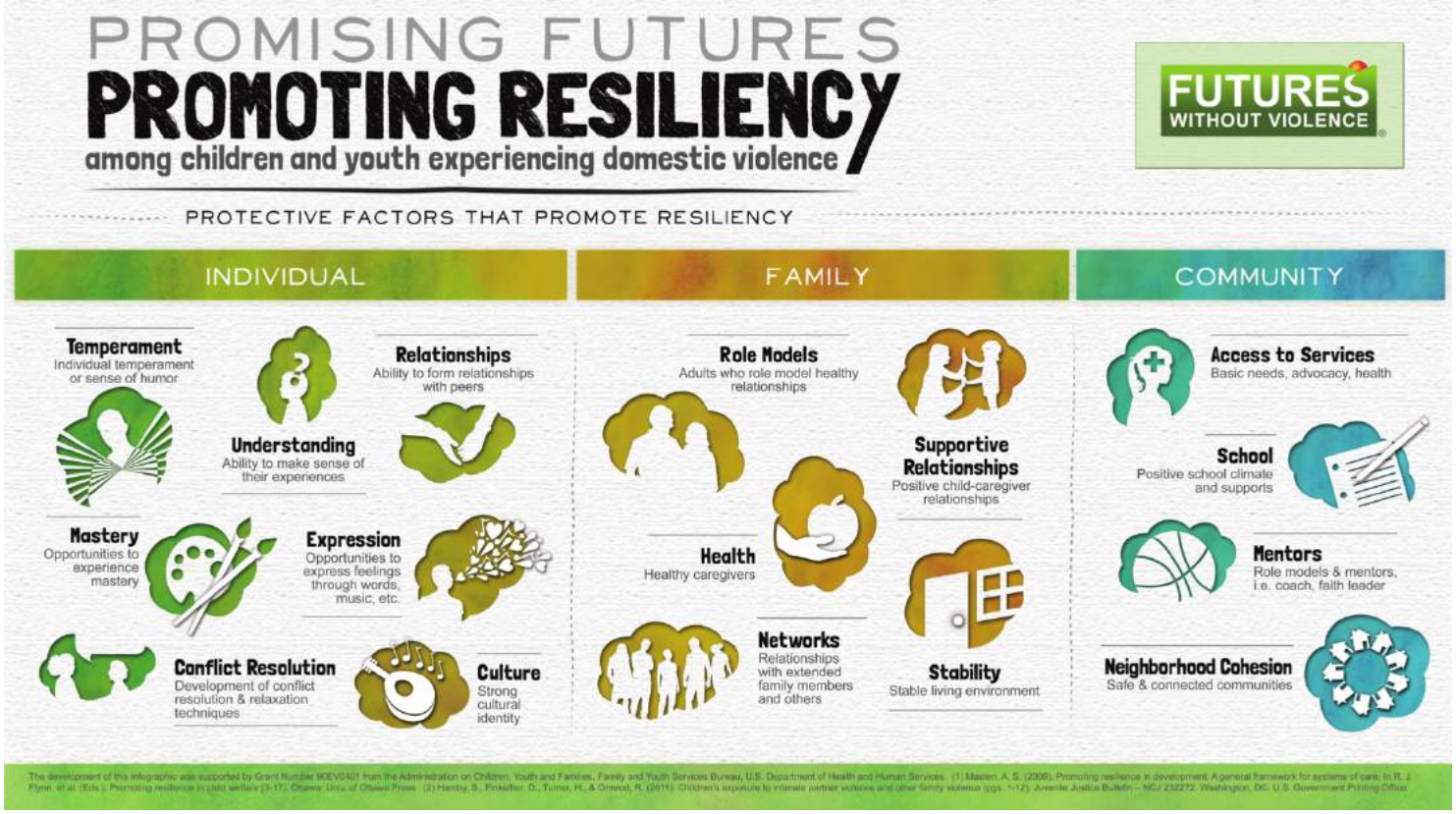
> *Resilience isn't something you're either born with or not. It's actually something that's learned, and for that reason teenagers, while particularly vulnerable to the negative effects of stress, are also better equipped than most adults to learn how to positively respond to stress."*
>
> Dr. Frances Jensen, *A Neuroscientist's Survival Guide to Raising Adolescents and Young Adults* (2015) at p.181

Definition

Resilience refers to the phenomenon of overcoming stress or adversity. Behaviors associated with resilience could be viewed as dysfunctional without context, but within a specific context may also be understood as strategies adopted to avoid further harm.[9] Resilience plays a vital role in teens overcoming teen dating violence and other stressors.

Learned Behavior

Resilience is a learned behavior. Because the teen brain is still developing, it is malleable and rapidly absorbs new information. Teens are therefore at a prime time to develop resilience if given the right support, community and services.



What leads to resilience:

The National Child Traumatic Stress Network, in their sheet titled "Resilience and Child Traumatic Stress" describes the system that can help maintain and develop resilience in children. The full sheet can be found at https://www.nctsn.org/sites/default/files/resources/resilience_and_child_traumatic_stress.pdf. Elements and extracts are described below:

Maintenance of Support Systems: A strong, positive relationship with a primary caregiver who acts to ensure safety and protection after a traumatic event can significantly enhance the development of resilience by supporting the child in making sense of their experience and dealing with difficult emotions.

Family: A circle of family members who are committed to each other, share time together, resolve problems and conflicts effectively and efficiently can also support resilient recovery.

Schools: A school that provides a positive social environment, works to foster and develop the child's cognitive skills, and promotes student safety and belonging through the support of school counselors, school social workers, school resource officers, teachers, and other school staff can create a sense of belonging and stability that can help children cope with trauma.

Community: A community that ensures access to quality essential services such as childcare, after-school programs, healthcare, and mental health services, has safe neighborhoods; provides green space, quality food services, and healthy recreational activities; fosters a sense of community and connectedness; and has an equitable and diverse culture" can similarly help develop effective coping skills.

9. Judicial Leadership

How can judges help teens learn resilience:

How the court system responds to teen dating violence victims and if the courts understand the seriousness of teen dating violence and have available the necessary support services and programs are significant factors in developing resiliency.

Assumptions: Teens may be coming to the courts for a number of reasons and with different backgrounds. For example, they could be seeking orders of protection, or have a child in common with their abuser, or face delinquency charges for criminal activity into which their abuser coerced them. It is important for judges to understand the larger role that trauma plays in the link between teen dating violence, delinquency, and victimization.

"Just because a teen is a criminal defendant doesn't mean they cannot be a victim of dating violence...as adults, we have had our entire life to develop positive, prosocial coping mechanisms. Teenagers have not had that time, and are still learning how to react to stressful situations, let alone victimization by a loved one. It's not unusual for teens who are in abusive relationships to exhibit trauma-fueled conduct such as aggressiveness, substance abuse, fighting or other disciplinary problems. Teens may also play hooky from school to avoid contact with the abuser."

Hon. Marshall Murray, 8 Things Judges Need to Know about Teen Dating Violence (2016), Article posted on NCJFCJ

Evaluating Cases Considering ACEs: Some behaviors might seem dysfunctional, but may be used as coping mechanism to avoid further harm. The role that trauma plays in shaping teenagers' behavior cannot be understated, especially as judges work to address offenders' behavior. When judges evaluate each case of teen dating abuse and violence, it is important to remember the long term effects of Adverse Childhood Experiences.

Crafting Responses: There is no definitive list or model in crafting responses to TDAV, but intervention programs including exploration of past trauma, teaching empathy, addressing alternative outlets for triggers, encouraging acknowledgement of the offender's conduct and caused harm, and exploring the dynamics of healthy relationship behaviors and consensual sex are significantly more effective. The intervention programs can be tailored towards cognitive training while also focusing on the development of inter-personal skills, opportunities for learning and identification of personal strengths and support systems seems fruitful" (Rowan Hodgkinson).

Supportive Force: *"If there is one thing that your teen survivor should remember from [their] court experience, it is the door to your court is always open. The immense societal pressure that teen survivors face to drop protection orders and return to their abusers is magnified in the complex world of adolescence. Being a teen is not easy. Being a survivor is much, much harder."*

Hon. Marshall Murray, 8 Things Judges Need to Know about Teen Dating Violence (2016), NCJFCJ, https://www.ncjfcj.org/news/8-things-every-judge-should-know-about-teen-dating-violence/

Significant Barriers for LGBTQIA2S+ Youth Seeking to Access the Court System:

LGBTQIA2S+ youth are affected by many issues unaddressed by the justice system. This environment may be or feel like one where they cannot be or present as their true selves, and have their identity respected. Courts and authorities have historically disproportionately targeted and discriminated against LGBTQIA2S+ youth, with hostility, or structural laws directly taking away their rights and services.

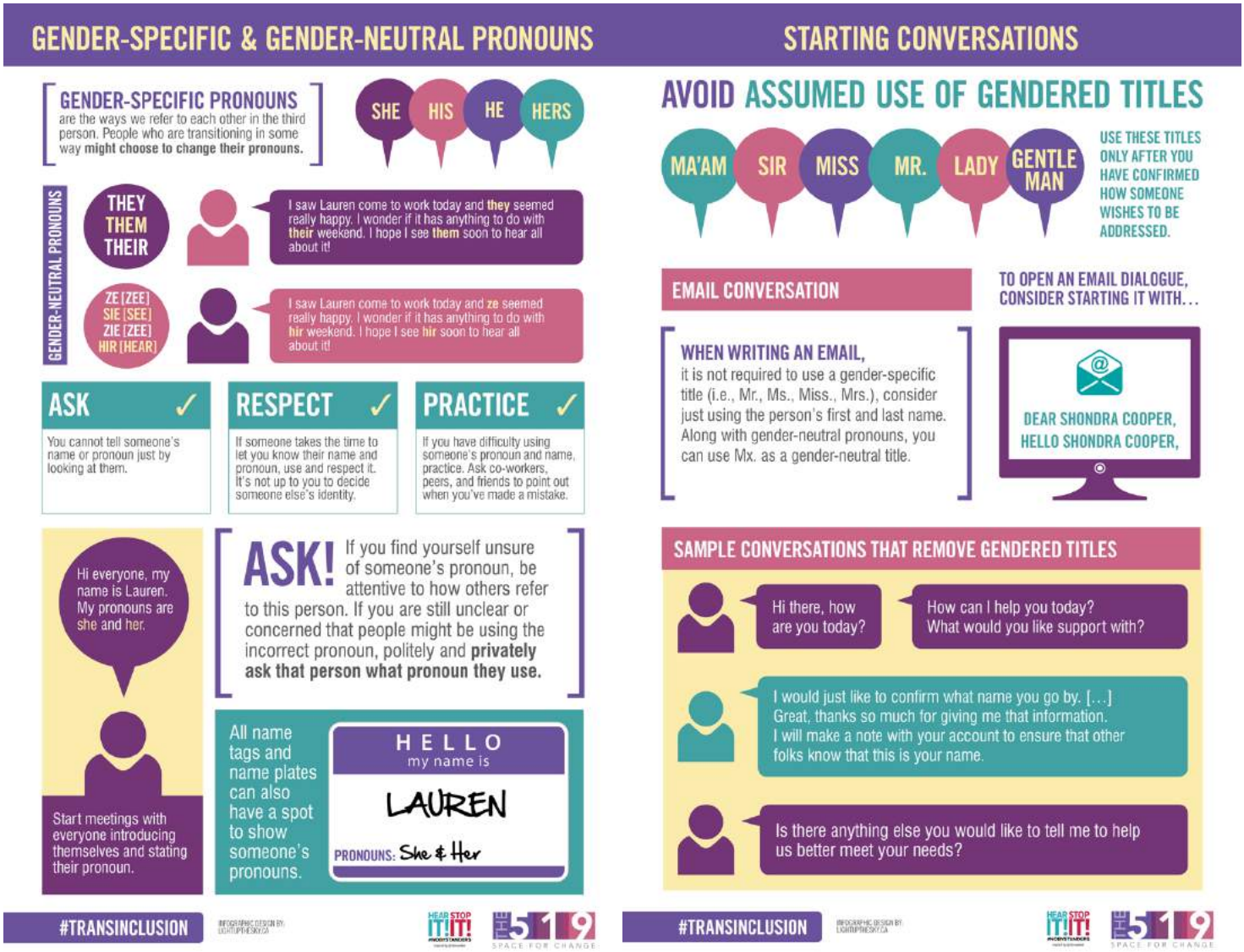
For young people generally, it takes a lot of energy, courage and strength to engage with the court system, but the **history of prejudice LGBTQIA2S+ youth are at risk of makes it especially hard for them to see the courts as an avenue for help or protection.**

How to make courtrooms a safer space for LGBTQIA2S+ Youth: Inclusive Language

Law: Federal law prohibits sex discrimination, including discrimination based on gender identity or transgender status, and several cities and states have specific anti-discrimination laws that prohibit intentionally failing to use a person's preferred name, pronoun, or title. For example, New York City Local Law No. 3 (2002), Code § 8-102 requires employers and covered entities to use the name, pronouns, and title with which a person self-identifies, regardless of the person's sex assigned at birth, anatomy, gender, medical history, appearance, or the sex indicated on the person's identification.[10]

Need for Safety: Using inclusive language is the first step towards making LGBTQIA2S+ youth feel safe in your courtroom. The history of discrimination against LGBTQIA2S+ people in the judicial and legal system makes the initial contact and knowledge of the courtroom a difficult and scary place for youth to get to, using accurate language shows you recognize and accept their identity is a first step towards making them feel comfortable and seen. Additionally, administrative paperwork and ways to identify themselves usually already cause them to deny or erase part of their identity, assigning the wrong gender and name, reinforcing the fact that they should not be themselves, or feel like themselves in this context, losing one's basic right to be recognized, and referenced, as who they are. The courtroom can become a place that helps, rather than a place that oppresses, erases and attacks them.

Below are guidances[11] [12] on how to implement and use this inclusive, gender-affirming language and paperwork.



Policies & Paperwork

Have both preferred and legal name on any paperwork, inquire about a young person's pronouns, and make sure to use the preferred name and pronouns stated.

Courts as a Safer Space

Create a court environment in which there is no tolerance for homophobic or transphobic language by others in the proceedings:

- Avoid "**misgendering**" (using the wrong pronouns) or "**deadnaming**" (using a person's pre-transition name) when identifying an individual. Misgendering and deadnaming create a hostile and exclusionary environment. It can also accidentally "out" someone, making them feel unsafe or triggering traumatic memories of discrimination and erasure.
- Correct other people when they misgender or deadname someone. If you are corrected, apologize without justifying why you made the mistake. If the individual visibly looks thrown off and upset, allow them space to process the emotions they are experiencing.

Protecting Confidentiality

Disclosure: Be conscious that not all youth are "out" to family, friends, and social circles, and of the risks and fears LGBTQIA2S+ teens face when disclosing their identity:

- Fear of reinforcing stereotypes about community and/or culture
- Fear of betraying family, community and/ or culture
- Fear of being ostracized from family, community and/or culture
- Fear of retaliation
- Fear of discrimination by courts and other authority figures

Respecting Confidentiality:

- Be mindful about discussing gender identity in open court or court documents without permission when it is not relevant to proceedings
- Be mindful of how issues are raised and whether something could be used against litigants if they are not "out".
- Allow individuals to define their gender and identity.

[1] Dr. Frances Jensen and Amy Ellis Nutt, *The Teenage Brain: A Neuroscientist's Survival Guide to Raising Adolescents and Young Adults* (New York: HarperCollins Publishers Inc., 2015), 107.
[2] Connie Lamm, Philip David Zelazo, and Marc D. Lewis, "Neural correlates of cognitive control in childhood and adolescence: disentangling the contributions of age and executive function," *Neuropsychologia* 44, no.11 (2006): 2139–2148, https://pubmed.ncbi.nlm.nih.gov/16310813/
[3] « The Truth About ACEs », Robert Wood Johnson Foundation, 2013, https://www.rwjf.org/en/library/infographics/the-truth-about-aces.html?cid=xsh_rwjf_pt.
[4] Kerry Jamieson, "ACEs and Minorities", Center for Child Counselling, December 13th, 2018, https://www.centerforchildcounseling.org/aces-and-minorities/
[5] Judith P. Andersen and John Blosnich, "Disparities in adverse childhood experiences among sexual minority and heterosexual adults: results from a multi-state probability-based sample." *PLOS One* 8, no.1 (2013), https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0054691
[6] "ACEs and Toxic Stress: Frequently Asked Questions," Center on the Developing Child, Harvard University, https://developingchild.harvard.edu/resources/aces-and-toxic-stress-frequently-asked-questions/
[7] Eliza M. Hirst, "Trauma, Resilience, and the Impact on Learning", American Bar Association, July 2nd, 2019, https://www.americanbar.org/groups/litigation/committees/childrens-rights/articles/2019/summer2019-trauma-resilience-and-the-impact-on-learning/
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[9] Sibel Korkmaz & Carolina Överlien, "Responses to Youth Intimate Partner Violence: The Meaning of Youth Specific Factors and Interconnection with Resilience," *Journal of Youth Studies* 23, no.3 (2020): 371-387, https://doi.org/10.1080/13676261.2019.1610557.
[10] Bill de Blasio and Carmelyn P. Malalis, "Gender Identity/Gender Expression: Legal Enforcement Guidance," NYC Commission on Human Rights, February 15th, 2019, https://www1.nyc.gov/assets/cchr/downloads/pdf/publications/2019.2.15%20Gender%20Guidance-February%202019%20FINAL.pdf.
[11] "Starting Conversations", The 519, https://www.the519.org/education-training/training-resources/our-resources/creating-authentic-spaces/starting-conversations.
[12] "Gender-specific & Gender-Neutral Pronouns", The 519, https://www.the519.org/education-training/training-resources/our-resources/creating-authentic-spaces/gender-specific-and-gender-neutral-pronouns.