THE STATE OF NEW HAMPSHIRE
SUPERIOR COURT

MERRIMACK, SS. **JULY TERM, 2025**

STATE OF NEW HAMPSHIRE
v.
ERIC SWEENEY

Docket No.: 217-2023-CR-00721

STATE'S MOTION IN LIMINE: TO PRECLUDE PROFFERED EXPERT TESTIMONY

NOW COMES the State of New Hampshire, by and through its attorneys, the Office of the Attorney General ("the State"), and moves to preclude specific possible testimony by retained defense expert witness Kari Oyen, as unsupported by the sources upon which the witness has expressly cited as authorities in reliance of stated propositions. In support of this motion, the State submits the following:

1. The defendant is charged with, inter alia, three counts of first-degree murder. Trial on the matter is scheduled to begin with jury selection on September 8, 2025.

2. By previously-filed notice, the defendant informed the State and the Court that he may rely upon the affirmative defense of insanity at trial. See generally RSA 628:2.

3. As part of that claimed insanity defense, the defense may call psychologist Kari Oyen. Dr. Oyen was retained by the defense in this matter, prepared an undated report submitted to the State (hereinafter, "Oyen report"), and was deposed by the State on June 30, 2025. The State recently obtained a copy of that deposition transcript.

4. As is pertinent to the present motion, Dr. Oyen did not review any materials specific either to the defendant or to the case. Nor did Dr. Oyen conduct any analysis specific either to the defendant or to the case. Rather, the Oyen report—and her anticipated trial testimony—is limited to her review of what she characterized as professional literature on the

matter of the influence of trauma on brain development, decision-making, and "expected outcomes." In the Oyen report, Dr. Oyen sets forth various propositions, which are purportedly supported by the authority(ies) expressly cited in the report. Dr. Oyen neither authored any of the cited authorities, nor participated in studies discussed by those cited authorities. The State has attached to this motion a copy of the Oyen report.

5. To begin, it is important to make clear what the State is moving to preclude, and what the State is not moving to preclude. The State is not moving to preclude Dr. Oyen from testifying. Nor is the State moving to preclude her anticipated trial testimony based upon much of the substance of the Oyen report.

6. The State is moving to preclude two general matters of trial testimony: 1) propositions asserted in the Oyen report, several of which she repeated in her recent deposition, for which the publications cited in support thereof do not, in fact, support said asserted propositions; and 2) propositions asserted in the Oyen report, for which the reference cited in support thereof is not actually a peer-reviewed publication, but rather non-peer reviewed material that has been misquoted.

7. As to the first objected-to category—propositions asserted in the Oyen report, for which the publications cited in support thereof do not, in fact, support said propositions—the following passages from the Oyen report are not supported by the accompanying citations provided by Dr. Oyen:

> "In a study by **Putnam et al. (2013)**, researchers noted that when the threshold of four or more ACEs was noted, the prevalence rate of severe mental health disorders increased significantly (mood disorders-above 50%, anxiety-70%, impulse control disorders above 50%, and substance abuse disorders-above 40%)." Oyen report, page 4.

"When children are exposed to repeated trauma, it can cause instability in regulation, especially in the ability to regulate fear **(Jacobson & Sapolsky, 1991)**." Oyen report, page 6.[1]

"Over time, these altered stress responses (HPA axis dysregulation) shape how a child interprets the world around them, often translating to negative thoughts and internal narratives and poorer cognitive function and social cognition (awareness of the needs or wants of others) **(Siegel, 2024)**." Oyen report, page 10.

"Assessments indicate that adolescents exposed to trauma often demonstrate poorer working memory and poor executive functioning skills **(Evans-Chase, 2014)**." Oyen report, page 10.[2]

"It can also lead to increased emotional reactivity for neutral events and difficulties with impulse control (acting before thinking) (Klabunde, 2024) [new citation **Ireton, Hughes and Klabunde (2024)**]." Oyen report, page 10.[3]

8. The State obtained and read the above-cited publications expressly cited and relied upon in the Oyen report in support of the quoted propositions, several of which Dr. Oyen repeated in deposition while relying on the same publications. The State could not locate in any of those publications the factual basis for the propositions set forth in the quoted passages.[4]

9. As to the second objected-to category, the following passages from the Oyen report are unsupported by any actual peer-reviewed publication but rather a non-peer-reviewed slide presentation at a conference. Notably, although the Oyen report cited to this asserted authority, the authority—and its true nature of conference presentation rather than peer-reviewed

[1] Dr. Oyen also used this article in her deposition, in support of her assertion that "when someone is exposed to repeated trauma it can cause instability in regulation, especially in the ability to regulate fear so that was the older citation. That was Jacobson and Sapolsky in 1991 . . ."

[2] Dr. Oyen also used the Evans-Chase article in support for her assertion at the deposition that "assessments indicate that adolescents exposed to trauma often demonstrate poor working memory and poor executive functioning skills. It's the Evans-Chase 2014 article."

[3] As to this passage, the cited reference in the Oyen report was not to an actual professional publication, but rather an informational article about that publication. When the State pointed that out in the deposition, Dr. Oyen thereafter provided a citation for the publication claimed to be the basis of the quoted proposition—Ireton, Hughes and Klabunde (2024). The State read both the article and the subject publication, and did not find the factual basis for the quoted proposition.

[4] As to what the State did to attempt to locate the factual basis for the subject propositions in the cited publications, the State both read the publications, and then conducted a word find of salient terms contained within the propositions.

publication—was not contained within the list of sources attached to the report. In addition to the cited matter not being a peer-reviewed publication, the Oyen report has changed the cited source material. As to what is contained in the Oyen report:

> "**Fletcher-Janzen (2018)** noted that outcomes associated with this include hyperarousal, such as impulsive defenses to neutral events, or the tendency to perceive threats where there is none, or the tendency to be hypervigilant. Oyen report, page 6 (emphasis added).
>
> "These traumatic exposures and high numbers of ACEs can also cause children to have quick triggers and be highly aggressive behaviors (**Fletcher-Janzen, 2018**)." Oyen report, page 6 (emphasis added).[5]

10. As to the actual cited source material for the above-quoted passages, it again is not a peer-reviewed publication, but instead a slide presentation created by someone other than Dr. Oyen for a conference. In addition, what the corresponding slide actually reads, in pertinent part, is the following:

> "Higher internal arousal creates impulsive defenses to perceived threats. Higher internal arousal creates tendency to perceive threat where there is none." (Emphasis added)
>
> "Quick trigger to highly defensive and aggressive behavior." (Emphasis added).

11. With this factual background, the State objects on several independent bases.

12. Initially, the State moves to preclude under New Hampshire Rule of Evidence 702(b), which states the following:

> A witness who is qualified as an expert by knowledge, skill, experience, training, or education, may testify in the form of an opinion or otherwise[6] if . . . the testimony is based on sufficient facts or data.

(Emphasis added).

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[5] Dr. Oyen gave similar testimony at her deposition, claiming—and using Fletcher-Janzen as her literature support—that children with a significant amount of trauma and adverse childhood experiences may be more prone to "having highly aggressive kind of behaviors. Again, that's based on the science, particularly the science of Dr. Fletcher-Janzen."

[6] In that regard, Dr. Oyen is not providing any opinion, but is "testifying . . . otherwise"—a namely, her review of what she purported to be professional publications on the identified subject matter, akin to an expert called to testify generally in a case involving a juvenile or young offender generally on brain development in adolescents/young adults, nonspecific to the defendant on trial.

13. Here, as to the subjects of the State's objection—specific quoted propositions asserted in the Oyen report that are not supported by the authorities cited in support thereof, and specific quoted propositions asserted in the report, for which the reference cited in support thereof is not actually a peer-reviewed publication, but rather non-peer reviewed material that has not been accurately restated—there is not only "insufficient facts or data" upon which such assertions are based, there is none, or it is different from what is represented in the Oyen report.

14. As to the former, five quoted passages in the Oyen report assert propositions for which the cited support thereof does not appear to actually state—either directly or implicitly—the cited proposition. That is akin—and as improper and likely as unethical—to a lawyer providing to the Court a citation to a case in support of a proposition when in fact the case provides no such support. And, it bears noting that in Dr. Oyen's sworn deposition she relied on these same citations when reaffirming under oath the same substantive propositions contained in the report. In can reasonably be assumed that she would repeat such citation at trial, in support of the same asserted propositions.

15. As to the cited slide presentation, not only is that source material not a peer-reviewed publication that may be relied upon by the relevant psychological community, the Oyen report has substantively changed applicable slide content: changing "impulsive defenses to perceived threats" to "impulsive defenses to neutral events," and transforming "Quick trigger to highly defensive and aggressive behavior"—to "hav[ing] quick triggers and be highly defensive and have highly aggressive behaviors."

16. For these reasons, none of the challenged passages/testimony is admissible under Rule 702. There simply is no cited accepted "facts or data" that supports any of these asserted propositions.

17. Aside from the State's objection under Rule 702, the State also separately objects under Rules of Evidence 402 and 403. As a starting point here, the challenged propositions are not relevant, as they are not actually supported by the authorities upon which Dr. Oyen has expressly relied, or any accepted authority identified by Dr. Oyen. See N.H. R. Evid. 401. Next, even if unsupported claims were somehow relevant, that minimal relevance would be substantially outweighed by "unfair prejudice, confusing the issues, [and] misleading the jury." N.H. R. Evid. 403. Such prejudice should be obvious: Dr. Oyen presenting as accepted propositions among the surveyed literature—and psychological community—propositions that are not actually factually supported thereby. It is a false imprimatur of professional acceptance that is misleading and for which the State has no fair avenue of impeachment.

18. Lastly, the State also separately raises a hearsay objection. Unless there exists actual verifiable support therefore, the challenged propositions—purporting to be reflective of the cited literature—are instead inadmissible hearsay, offered for the truth of the matters asserted therein. As the offering party of such hearsay, the defense must assert an applicable exception.

19. At the very least, the State has provided a good-faith basis for objecting to any proposed information outlined supra. As the party seeking admission, it is incumbent upon the defense in the first instance to establish admissibility in the face of articulated evidentiary challenges, including specifically where in the authorities cited in the Oyen report the challenged assertions have factual or data basis.

WHEREFORE, the State of New Hampshire respectfully requests that this Honorable Court:

A. Grant the State's motion; and

B. Grant such further relief as may be just and proper.

Respectfully submitted,

THE STATE OF NEW HAMPSHIRE

By its attorneys,

John M. Formella
Attorney General

July 22, 2025

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CERTIFICATION

I certify that a copy of this notice has been sent to counsel for the defendant, via the electronic case filing system.

July 22, 2025

/s/ Peter Hinckley
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ATTACHMENT A

A Report Prepared for State v. Eric Sweeney, case number 217-2023-CR-721,

Merrimack Superior Court

Influence of Trauma on Brain Development, Decision-Making, and Expected Outcomes

A Review of the Extent Literature

Kari A. Oyen, Ph.D.

Abstract

Over the last 30 years, research discoveries have been made that clearly indicate differences in brain structures among children who have experienced acute, chronic, and complex trauma. Further, Adverse Childhood Experiences (ACEs) are specific negative experiences that can have long-term impacts on a child's health and well-being. When traumatic events occur, it causes a fight, flight or freeze reaction, which, when prolonged, can cause long-term toxic stress responses. Long-term toxic stress on the brain creates structural differences in the brain. Impacted brain areas differ based on the critical periods of brain development in which traumatic events occur. Clear evidence indicates that the amygdala, or the fear center of the brain, is impacted significantly in children who have experienced frequent and significant trauma early in the developmental period. This toxic stress response changes the way a child makes decisions and interprets the world around them. When approached even with neutral stimuli, these children tend to be hypervigilant, interpret the world in a negative way, and over-respond to the environment around them.

Influence of Trauma on Brain Development, Decision-Making, and Expected Outcomes

A Review of the Extent Literature

Introduction

As the brain develops, it creates pathways for information to efficiently and effectively enter and be stored in our memory. This directly coincides with how we make decisions in our lives. As children enter the adolescent stage of development, many influences can impact decision-making, such as dopamine receptor theories, and buffering capacity theories that impact this critical period of time. Research clearly indicates that this dynamic situation is particularly impacted by exposure to trauma at any time during the developmental period, directly influencing how a person interprets the world around them. A review of trauma, particularly in the developmental context, as well as brain development, is further detailed throughout this report. The compounding impact of trauma on decision-making will be highlighted as well.

Definition of Trauma

Spence et al. (2021) highlight the core constructs of trauma, clarifying that trauma can be the actual event itself as well as the response of a person to the negative event. Trauma events, as explained by the American Psychiatric Association (2013), are actual or threatened death, serious injury, or violence. These events can be acute (short-term), chronic (long-lasting), or complex (ongoing and cyclical). In a landmark study from 1995-1997, the Center for Disease Control, in partnership with Kaiser Permanente, asked 17,500 adults in Southern California receiving physical examinations to complete confidential surveys regarding their experiences in childhood and connections to their current health and behaviors. From this landmark study, the concept of Adverse Childhood Experiences (ACEs) emerged (Felitti et al., 1998). ACEs are key traumatic experiences in the areas of abuse, neglect, and household challenges that a child experiences that are linked to poor health and well-being outcomes later in life (Felitti et al., 1998). These

experiences include abuse (physical, sexual, or emotional), neglect (physical or emotional), and household challenges (mental illness, intimate partner violence, parental separation or divorce, incarceration, or substance misuse or dependence) (Centers for Disease Control and Prevention, 2015). According to the National Survey of Children's Health (2022), over 39% of youth aged 12-17 have experienced one ACE, while around 17% have experienced two or more ACEs. Garbarino (2016) noted that only .01% of people report an ACEs score of greater than 8. Recent estimates from Swede et al. (2024) asked adolescents about their ACEs and found that over 80% of adolescents reported one ACE, and 22.4% reported greater than 4 ACEs. Clearly, it is common to have one ACE present in one's childhood experience, but it becomes less common to have a larger number of ACEs. As ACEs increase, so does the risk for poor outcomes. In a study by Putnam et al. (2013), researchers noted that when the threshold of four or more ACEs was noted, the prevalence rate of severe mental health disorders increased significantly (mood disorders-above 50%, anxiety-70%, impulse control disorders above 50%, and substance abuse disorders-above 40%). Interestingly, the different types of ACEs that were most impactful on a child differed by sex. Women were most impacted by sexual abuse and men were most impacted by parental depression, parental anxiety, parental alcohol and drug use, and economic adversity. This indicates that not only the number, but the type of ACEs that a child experiences can impact the poor outcomes that they experience (Putnam et al., 2013).

Children are intertwined with their communities and are often faced with trauma directly related to the system in which they are raised. Hodgdon et al. (2019) noted four clusters emerged from environments for children. The first is overt forms of trauma, like physical, sexual, and psychological maltreatment. The next is environment family forms that are events within the family system, such as neglect or lack of appropriate caregiving from parental figures. There is also environmental community forms of trauma where the community and school settings demonstrate high levels of violence and lack

of physical and psychological safety. These systems may have high levels of drug use, bullying, gang violence, and gun violence. Lastly, Hodgdon et al. (2019) expanded acute forms of trauma to include sudden, or unexpected forms of trauma, like acute injuries, accidents, or significant medical traumas. McLaughlin et al. (2024) noted that 61.8% of adolescents experienced a traumatic event in their lifetime, with 19% identifying multiple traumatic event exposures leading, on average, to higher levels of poor outcomes.

Brain Development

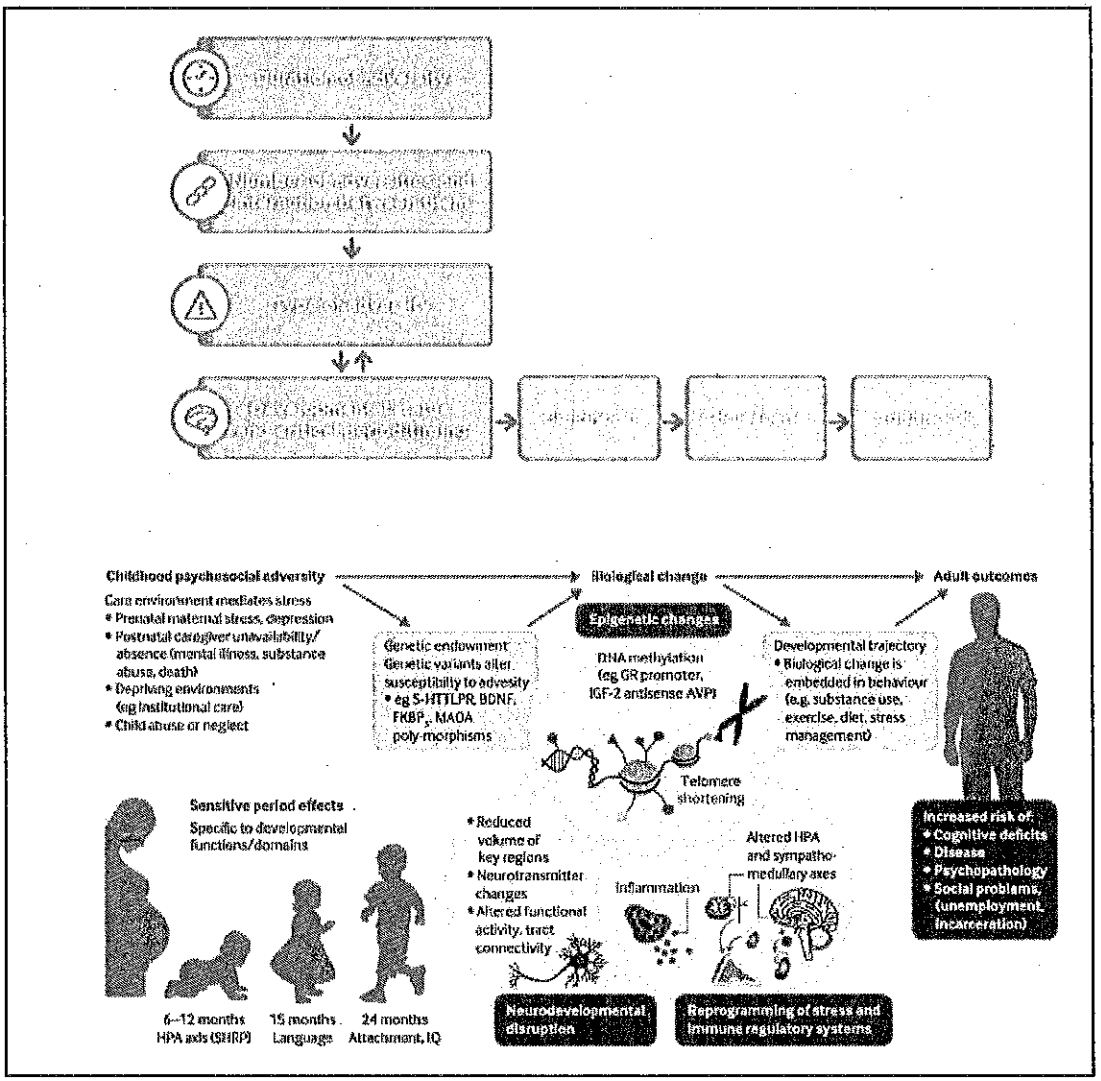
To understand the impact of trauma, it is vital to understand basic brain development. In early brain development, while a fetus's brain is growing in size, the primary function of the brain is to develop major pathways for connections between neurons, wrinkles on the outer surface, and create the long range signaling pathways of white matter up until birth (Psychology Today, n.d.). In the first years of life, those connections grow and the process of myelination boosts speed between neurons, those major pathways in the white matter continue to develop, and the brain volume continues to grow (Psychology Today, n.d.). As the brain peaks in size (age 10 for girls and 14 for boys), it begins to change from focusing on growth and movement and sensation to improving executive functions, which continue to develop well into adulthood (Psychology Today, n.d.). During the adolescent time, the brain is spending time becoming as efficient as possible by scaling back the number of synapses through a process called selective pruning (Psychology Today, n.d.). Structures like the amygdala (emotional memory) and hippocampus (long-term memory) grow in size and other areas (striatum) get smaller (Psychology Today, n.d.). Of particular importance is the development of the prefrontal cortex and the limbic system. The prefrontal cortex is involved with planning, organizing, and thinking about things from start to finish, or thinking about things before you act on them (Diekema, 2020). The limbic system, otherwise known as your "emotional brain", is often theorized to regulate emotional memory and long-term memory (Diekema, 2020).

Importance of Studying Trauma

Trauma has significant impact on brain development. Children who are born to parents who themselves have high levels of ACEs can experience in utero impacts on brain development, such as epigenetic changes in stress system genes, telomere shortening, fetal HPA axis dysregulation, and fetal autonomic nervous system dysregulation (Bhushan et al., 2020). As a child develops, each exposure to trauma signals to their brain that help is needed, which sends in an onslaught of neurotransmitters that help the brain cope with stress (Sterling and Eyer, 1988). If the stress from trauma does not retreat and a safe environment is not found, then the brain is in a state of constant hyperarousal and is constantly filled with these neurotransmitters (Chrousos, 2009; Sapolsky et al., 1986; Jacobson & Sapolsky, 1991; National Scientific Council on the Developing Child, 2014). This can cause a variety of outcomes, like reduced feelings of pain and a person to feel that they are in constant states of fear (Chrousos, 2009; Sapolsky et al., 1986; Jacobson & Sapolsky, 1991; National Scientific Council on the Developing Child, 2014). The distinct ways the brain adapts are: resistance, known as "fight" (body fights back), shock, known as "freeze" (with decreased blood pressure, body temperature and muscle tone), and "flight" where you flee away from the negative stimuli, all of which can leave to exhaustion (body defenses break down) (Chrousos, 2009; Sapolsky et al., 1986; Jacobson & Sapolsky, 1991; National Scientific Council on the Developing Child, 2014). When children are exposed to repeated trauma, it can cause instability in regulation, especially in the ability to regulate fear (Jacobson & Sapolsky, 1991). Fletcher-Janzen (2018) noted that outcomes associated with this include hyperarousal, such as impulsive defenses to neutral events, or the tendency to perceive threats where there is none, or the tendency to be hypervigilant.

These traumatic exposures and high numbers of ACEs can also cause children to have quick triggers and be highly defensive and have highly aggressive behaviors (Fletcher-Janzen, 2018). When the brain is allowed to have periods of low stress or relaxed periods, the brain is able to analysis, adjust to,

and better prepare for the next potential stressor. The hyperarousal brain (highly stressed brain) also adapts, but in a way that is highly reactive and less logical in decision-making because of there is less involvement of the prefrontal cortex (Bhushan et al., 2020). The impacts of this toxic stress on outcomes can depend on the level and stage at which the child was exposed to traumatic events. The figure below highlights the interactions that can influence the levels of dysregulation of stress on brain development.



Note. Childhood adversity, influenced by factors like duration, number, interactions, and types, interacts with an individual's genetics and development. This interaction can lead to a toxic stress response, causing various biological changes such as neuro-endocrine, immune, metabolic, and genetic regulation disruptions. These changes increase the risk of lifelong health and social problems (Bhushan et al., 2020).

Normal Decision-Making Processes in Adolescents

Adolescent decision-making is often a misunderstood process. People often attribute bad decisions in adolescents to teens not understanding the risk associated with a decision, or simply with not taking the time to know the danger of a situation (Diekema, 2020). These assertions are not found when decisions are studied. Based on brain development, Steinberg (2008) found that adolescents are no worse at perceiving risk than adults and approach risk taking the same way as adults. Where they differ is in the brain systems that they are using to govern their decisions. Adolescent brains use social-emotional systems to govern their decisions whereas adults use cognitive control systems to make decisions (Steinburg, 2008). The amygdala, or the fear center of the brain, is at the center of decision making for adolescents and is how they process social-emotional information. There are several prominent theories of what is going on in the brain that affect how adolescents make decisions (Steinburg, 2008). The dopamine receptor remodeling theory is a hypothesis that around the age of ten, a person's brain has a reduction in dopamine and this creates a reward deficiency syndrome by which adolescents are more likely to seek out drugs. They are also more likely to seek out anything that they find novel as a means of sensation seeking to get rewards to meet this deficiency. The second theory is buffering capacity theory which indicates that the brain has become a super highway and is less sensitive and more efficient. Therefore, the adolescent needs more dopamine for things to be as rewarding as they once were (Steinburg, 2008). The last is the impact of hormones on the brain. This theory is still in development and little is known about the influence of things like estrogen on serotonin levels in the brain. There are indications that pubertal hormones might be stronger and impact reward seeking on children who mature early versus those who mature on time or later (Steinburg, 2008). These combined may have strong influence on how an adolescent makes decisions.

It is also important to talk about the influence of peers on adolescent decision-making. When researchers want to study the impact of peers on decision-making, they often make use of simulated driving as a task to assess risk-taking. In a study by Albert and colleagues (2013), they set up adolescent drivers and compared them to adult drivers on simulated driving tasks. When they were alone on driving tasks, they performed similarly to mature adults. Then, the researchers wanted to examine how students would drive with a peer present. The presence of a "known peer" increased risk-taking behavior by 50%. Then, they introduced a "strange peer" to the student. They wondered if a stranger would change risk taking behavior. The results were the same as the known peer. Then, they moved the peer to another room, but told the adolescent that the peer was watching them drive the car. The results remained the same and the risky behaviors stayed similar to when a peer was present. Then, they removed the peer all together, but told the adolescent that the peer was watching them in another room. The results were the same as if the peer was present and the risky behaviors were similar to that if the peer was present. They noted that during any peer event, the adolescent showed brain activation in the reward centers of the brain and less activation in the prefrontal cortex (planning, thinking) sections of the brain. This highlights the vital importance of the social emotional system on decision-making for the adolescent brain and can be further complicated when an adolescent has experienced trauma.

Neurobiological Impact of Trauma

Structural & Functional Changes in the Brain

Extensive literature reviews on both human and animals reveal differences in the effects of sustained stress and trauma on brain development that change the structures of the brain, particularly on the hippocampus, amygdala, and prefrontal cortex regions (De Bellis & Zisk, 2014). Taken together, the impacts of this stress (in the studies, stress is transformed to cortisol levels in the brain) can cause a variety of dysregulation of neurotransmitters (serotonin, dopamine, and oxytocin) as well as a dysregulation of

dorsal executive control circuits, which impact decision-making (De Bellis & Zisk, 2014). Over time, these altered stress responses (HPA axis dysregulation) shape how a child interprets the world around them, often translating to negative thoughts and internal narratives and poorer cognitive function and social cognition (awareness of the needs or wants of others) (Siegel, 2024). This dysregulation of neurotransmitters in the brain can lead to attachment problems in adolescence and throughout the lifetime. This is often referred to as the Toxic Stress Response where early life adversity creates chronic dysregulation in the brain that is caused by prolonged activation of stress (or trauma) on the brain (Bhushan et al., 2020). Assessments indicate that adolescents exposed to trauma often demonstrate poorer working memory and poor executive functioning skills (Evans-Chase, 2014). In particular, the dysregulation of the amygdala, ventral affective processing, and reward circuits can lead to disruptive behaviors, anhedonia, and addictions (De Bellis & Zisk, 2014). It can also lead to increased emotional reactivity for neutral events and difficulties with impulse control (acting before thinking) (Klabunde, 2024).

Behavioral Consequences of Trauma

Children who experience trauma early in life continue to struggle into adolescence. There are many poor outcomes that can be associated with trauma that include, but are not limited to delinquency, mental health struggles, substance abuse, as well as fighting (Duke, Pettingell, McMorris, & Borowsky, 2010; Evans-Chase, 2014). Other poor outcomes can be more serious in nature, such as antisocial behaviors, dissociation, or victimization (Curtis, 1963; De Bellis & Zisk, 2014; Widom, 2014). When the lens looks to criminal behaviors, children who are exposed to violence can often demonstrate an increased risk for being perpetrators of violence at a later time because of the cycle of violence (See Widom & Maxfield, 2001; Wilson, Stover, & Berkowitz, 2009). Further, when looking to juveniles in the correctional system, 75-93% of youth that enter the justice system have been exposed to some sort of trauma, as opposed to

only 25-35% of the general population (Costello, Erklani, Farbank, & Angold, 2003; Dierkhising et al., 2013; Evans-Chase, 2014). Specific trauma of child maltreatment has been studied as it relates to later criminal behavior and found to increase the risk of later criminal behavior by 50% (Caspi et al., 2002; Garbarino, 2016). This demonstrates how the impact of trauma on a child who then goes into their adolescent years can then translate into increased risk for criminal behavior. Taken together in concert with their adolescent decision-making brain, this can further amplify the risk of behavioral consequences. Studies that examine the impacts of early onset of trauma in conjunction with persistent and chronic offending indicate that it can be related to dysfunction of family systems as well as the self-dysregulation that is related to trauma and decision-making for these children (Assink et al., 2018; Wilson et al., 2009).

Conclusion

The impact of trauma on key regions of brain development is instrumental in understanding how one understands and interprets the world around them. Taken together with the compromised decision-making abilities of adolescent children, it is understandable how a child that has a history of significant trauma would approach decision-making in a different way that a child without trauma. A child with a brain impacted by trauma will see the world differently and respond to it differently a child without trauma. They will also differ in how they interpret physical and psychological safety of situations as they arise. Children who experience trauma can easily interpret neutral situations as negative and be hypervigilant to the world around them. Because they have a constant toxic stress response, it can feel abnormal not to have a chaotic world around them, so at times, they might actually create chaos around them to mimic the stress response that feels "normal" to their brains. This is because the neural pathways of stress are so well worn and the neural pathways of calm and safety are not. Fortunately, interventions targeting coping skills and better mechanisms to regulate fear can be used to lessen the impact of these early experiences and create new neural pathways for youth to rewire circuits in the brain to better cope with the every day

demands of the environments that surround them. This is only accomplished with wrap around services that include therapeutic as well as structured support systems that teach, model, and reinforce appropriate behaviors to help them make sense out of what things have happened to them and how they can use better skills to ensure that they lower stress responses to neutral events in the future.

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