



F7 “The Worst of Both Worlds”: Neurodevelopment of the Transitional Age Brain

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Learning Overview: After attending this presentation, attendees will appreciate the major neurodevelopmental processes present in adolescents and young adults and its impact on their behaviors and decision-making abilities.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by providing a basic introduction to neurodevelopmental processes present in youth and young adults. Knowledge regarding the neurodevelopmental basis for behavior will enhance the legal practitioner’s ability to understand and communicate with their adolescent and young adult clients, as well as enhance advocacy efforts.

In the decades between *In Re Gault* and *Miller v. Alabama*, the legal system in the United States has sought to develop legal processes and remedies that reflect our evolving societal values while maintaining the due process rights of children and adolescents accused of major crimes.^{1,2} In 1966, Justice Fortas famously captured the gestalt of this legal quandary when he wrote, in the majority opinion for *Kent v. United States*, that, “The child receives the worst of both worlds ... neither the protection accorded to adults nor the solicitous care and regenerative treatment postulated for children.”³

During the past two decades, the concept of the “transitional age brain,” occurring between ages 13 and 25, has become part of the child and adolescent psychological and neurodevelopmental canons. The transitional age brain, and the behaviors it produces, is precariously balanced between the surging development of subcortical regions of the brain that drive risk-taking behavior and the gradually emerging prefrontal regions that enhance behavioral restraint. Simultaneously, the novelty-seeking circuitry is primed, but the reward response is quiescent, thereby driving the adolescent or young adult to impulsively seek more extreme stimuli to feel the psychological and physical reward of the behavior (e.g., binge drinking, impulsive drug use, multiple sexual partners, sexting).

This neurodevelopmental period is also marked by significant increases in psychiatric and physical morbidity (e.g., depression, Sexually Transmitted Diseases [STDs]), high risk social behaviors such as drug and alcohol use, risky sexual practices), and mortality from violence, accidents, or suicide. To complicate matters further, intellectual disabilities, developmental delays (e.g., autism spectrum disorders), chronic medical conditions (e.g., epilepsy), trauma due to abuse and neglect, and psychosocial stressors can alter the time course, and ultimate outcome, of the individual’s neurodevelopment. These physiological or environmental effects can be exerted directly, such as occurs with brain injury, or indirectly, as mediated by hormonal systems and environmental impact on genetic expression (e.g., G x E interactions). Regardless of etiology, the above factors can impact the form and function of the transition age brain and can impact the individual’s life course.

This presentation will provide the legal practitioner with a plain language explanation of the neurodevelopmental basis of impulse-control difficulties and risk-seeking behavior that often bring adolescents and young adults before the court. Utilizing a neurodevelopmental lens will aid the legal practitioner to understand complicated issues surrounding the adolescent’s or young adult’s legal decision-making capacity, their ability to meaningfully participate in legal proceedings, and their susceptibility to peer influences and coercion.

Reference(s):

1. *In Re Gault*, 387 U.S. 1(1967).
2. *Miller v. Alabama*, 567 U.S. 460 (2012).
3. *Kent v. United States*, 383 U.S. 541 (1966).

Neurodevelopment, Adolescent, Capacity