I9 Recent Scientific Advances in the Understanding of Adolescent Brain Development and Its Forensic Applications: An Update

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Upon completion of this presentation, attendees will have a clearer understanding between the physiological difference between the adolescent and adult brain; understand forensic implications of recent research findings on adolescent brain development; and understand risk factors that contribute to adolescent violent crimes.

This presentation will impact the forensic community and/or humanity by providing a better understanding of the legal issues regarding juveniles and the need for revised legislation with regards to punishment.

Introduction: Society has long struggled with the question of when do people become competent and responsible for their actions warranting certain punishments. Recent research findings have illuminated under- standing of adolescent brain development and its immaturity in comparison to adults.

History of Adolescents: The concept of adolescence emerged in the 1900s. Prior to this time children and adolescents were treated as adults. The juvenile justice system in 1899 was created in order to handle youth separate and distinct from adults, preventing penalization of juveniles for their immature minds. With the advent of drugs. gangs, and the increase of violent crimes committed by juveniles, particularly in the schools, society has reacted by demanding harsher punishments and adult penalties including the death penalty for juveniles. The death penalty, the maximum punishment for adults is society's exaggerated response to a complex problem without full understanding of adolescents and their behaviors.

Recent Research Findings: Functional MRI has allowed researchers to study and demonstrate the differences between the developing adolescent brain and the fully developed adult brain. The prefrontal cortex, the area of the frontal lobe, the largest part of the brain associated with rational thinking, impulse control, judgment, planning for the future, and understanding of consequences does not fully develop adult capacities *until* the early twenties. In addition to physical changes of the brain, adolescence is a time of significant hormonal and emotional change. Testosterone, which is closely associated with aggression, increases tenfold in adolescent boys. Furthermore, pediatricians have identified risk factors such as witness to domestic violence, substance abuse, and victim of physical and sexual assault as triggers to violent behaviors in adolescents. On the basis of the aforementioned scientific findings it becomes apparent that a grave injustice is done in treating juveniles as adults. These developments have implications in the legal process, the principles surrounding punishment and the culpability of the offender and their appropriate punishment. This paper will discuss all these issues.

Conclusions: With these recent research findings perhaps it would be important for society to reexamine its enthusiasm in ascribing too many adult characteristics to adolescents. The research makes clear that adoles- cents do not think and behave the same way as adults, and therefore, should not be legally treated the same way.

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