



University of Connecticut Health Center
School of Medicine

Written Testimony by Yifrah Kaminer MD, MBA Professor of Psychiatry and Pediatrics
Alcohol Research Center and Injury Prevention Center.

Judiciary Committee
March 23, 2012

H.B. No. 5546, An Act Concerning Sentence Modification for Juveniles

Dear Judiciary Committee:

This testimony is in support of "*A Second Look: Review of Lifetime Incarceration of CT Children*". I submit this testimony in support of H.B. No. 5546, An Act Concerning Sentence Modification for Juveniles.

I am a child and adolescent psychiatrist with 25 years of expertise in the research of assessment and treatment of high-risk behaviors in teens. I have been the recipient of several federal research grants from the NIH.

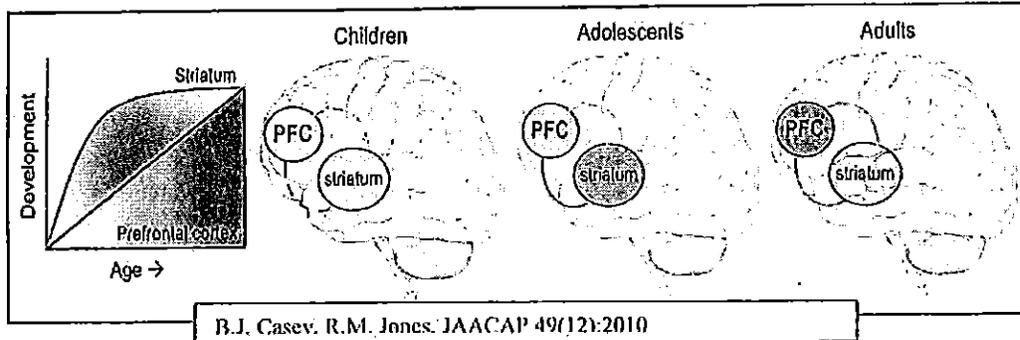
Adolescents (age range 12-18 years of age) are not "miniature adults". Starting in puberty and throughout the adolescence developmental phase that prepares them for early adulthood, they go through several important normative maturational biological and behavioral (BioBehavioral) changes*. During adolescence behavioral activation in lower brain centers (Striatum and limbic system) demanding immediate gratification overpower inhibitory behavioral centers in higher centers (Pre-frontal cortex-PFC) of the brain (see solid line leading from the striatum to the PFC in the attached diagram). Consequently all teens manifest varying individual levels of increased impulsivity** (reaches its peak at age 15), sensation seeking*** (reaches its peak between 13-17 years of age), negative disinhibition and boredom that may put them and others in "Harm's Way" or high-risk behaviors****.

High-risk behaviors includes but are not limited to reckless driving, suicidal behavior, physical and emotional aggressive behavior, precocious and unprotected sex, substance abuse and gambling behavior. A small percentage of teens manifest a high level of tendency for high-risk behaviors. This tendency, coupled with other factors such as personal and familial psychopathology as well as environmental influences (to name just a few) may increase the chances for involvement in criminal activity.

Nevertheless, these developmental behavioral tendencies for high-risk behaviors start to plateau in early to mid-twenties due to completion of the maturational processes occurring, particularly in the brain. Furthermore, higher brain centers are now in a better position to "gain" control of the "demands" of lower brain centers for immediate gratification (see attached diagram as delineated by the solid line going from the PFC to the stratum). Consequently, around the mid-twenties young adults are more capable than adolescents to control their behavior, manifest improved reasoning due to the development of more mature executive brain functions and are worthy of a further evaluation for neurobehavioral maturity.

An Equal Opportunity Employer

FIGURE 1 Cartoon model of ventral striatal cortex and prefrontal cortex (PFC) interactions across development. Note: Deeper color indicates greater regional signaling. Line represents functional connectivity, with solid line indicating mature connection and dotted line indicating immaturity. Reprinted from *Current Opinion in Neurobiology*, Vol. 20, Somerville LH, Casey BJ. Developmental neurobiology of cognitive control and motivational systems, 236-241. Copyright 2010, with permission of Elsevier.²¹



* A massive increase of secretion of steroidal hormones in puberty and beyond that leads to potential increase in irritability, moodiness and aggression. Increased pruning of synapses in the brain and increased myelinization of neurons in the brain.

** A tendency for rapid response to internal or external stimuli with diminishing regards to potential negative consequences.

*** A tendency to seek out novel and highly stimulating experiences and a willingness to take risks to attain these experiences.

**** A behavioral tendency to take risks in response to cues for potential reward in spite of some probability for undesirable consequences.

In Conclusion

A periodic assessment of Biobehavioral maturation is strongly recommended given the increasing scientific evidence for brain maturation in the mid-twenties. Potential maturation could make rehabilitation a viable solution for some youth. These findings should be balanced versus factors that might hamper rehabilitation such as increased levels of psychopathy in particularly with high levels of callousness as well as reduced empathy-emotionality.

Such a balanced approach would serve well the safety of society while providing hope for young people who committed crime during the developmental phase of adolescence.

Contact Info

E-mail: kaminer@uchc.edu