Centre for Lifespan Development Research

Brock University

Research Snapshot

Centre for Lifespan Development Research

Risk-Taking Propensity in Adolescence

Is the pattern the same for males and females?

Impulse Control & Sensation-Seeking — What is this research about?

Epidemiological data indicate that risk-taking behaviours increase during adolescence and into early adulthood, with youth in this age range engaging in behaviours such as risky driving, alcohol and drug use, self-harm, unsafe sexual practices, and crime at higher rates than other age groups. These dangerous activities pose significant threats to the mental and physical well being of adolescents (e.g., injury, illness, or death) and impose substantial costs on society.

Some may think that adolescents' increased involvement in risk-taking is due to youthful ignorance, delusions of invincibility, irrationality, or a misunderstanding of risks. However, research has indicated that adolescents do not differ consistently from adults in their assessment and understanding of risky behaviours; that is, adolescent risk-taking does not appear to be due to a failure to identify the potential consequences of such behaviour. The *Dual-Systems model* of adolescent brain development offers an account of the observed age-related pattern in risky behaviour. According to this model, patterns of development of two neurobiological systems render adolescence a time of relatively high *sensation-seeking* (the inclination of pursue exciting, novel or emotionally intense experiences) and low *impulse control* (the ability to resist temptations and delay gratification). Overall, this theory posits that the brain's *socioemotional system*, which is involved in sensation-seeking, undergoes rapid development and "activation" around the time of puberty. In contrast the brain's *cognitive control system*, which serves to modulate emotional and behavioural impulses (i.e., impulse control), matures gradually throughout adolescence. The combination of a "revved-up" socioemotional system with an underdeveloped cognitive control system is thought to explain adolescents' predisposition to risky-behaviour/sensation-seeking, especially in emotionally arousing situations.

A gap within the research on the Dual-Systems model is a rigorous examination of whether and how the development of sensation-seeking and impulse control differs for males and females. The fact that males outnumber females in various forms of risky behaviour (e.g., fatal crashes, gambling, crime, etc.) suggests that there may be sex differences in the levels of sensation-seeking and/or impulse control. In fact, research generally finds that males score higher than females on sensation-seeking and impulsivity. These sex differences in sensation-seeking and impulsivity may be partly due to sex differences in pubertal timing and in the evolutionary pressures placed on males and females. For example, males may have faced greater evolutionary pressure than females to attain high social status through risk-taking. To investigate this topic further Dr. Elizabeth Shulman examines the developmental trajectories of impulse control and sensation-seeking.

How did they do it?

In order to conduct her research Dr. Shulman and colleagues focused on a sample of 8,270 youth between the ages of 10 and 25 who were part of the National Longitudinal Study of Youth 1979 Child and Young Adult Survey. Participants provided data on impulse control and sensation-seeking at least once between the years of 1994 and 2010.

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Results

In their work, Dr. Shulman and colleagues uncovered sex differences in the development of impulse control and sensation-seeking, which may contribute to sex differences in risk-taking behaviour. Overall, Dr. Shulman found that, across adolescence, females tend to exhibit higher levels of impulse control and lower levels of sensation-seeking as compared to males.

Focusing specifically on impulse control, Dr. Shulman's work indicates that male and female patterns of growth around on this trait are fairly similar, but that females' rates of growth tend to be a bit faster than males (see Figure 1). Dr. Shulman has pointed to evolutionary theory to explain this finding, suggesting that it could reflect pressures placed on females to constrain their impulses.

In terms of sensation-seeking, Dr. Shulman's work suggests that females tend to exhibit peak levels of sensation-seeking earlier than males (e.g., between the ages of 16 and 17 versus 18 and 19 for males), which may be linked to females' earlier pubertal maturation. Moreover, Dr. Shulman's research indicates that that, during the transition to adulthood, females tend to experience a more rapid decline in sensation-seeking than males—roughly twice as fast (see Figure 2). This pattern of decline is consistent with the evolutionary models that posit different functional purposes of sensation-seeking for females versus males. For both traits, the gender gap widened between mid-adolescence and early adulthood.

The overall pattern of results suggests that, for males relative to females, there may be a more significant and longer window of vulnerability to risk taking, which is consistent with evidence that young men in fact engage in higher levels of risk-taking than do young women. Additionally, the results may help to explain why females tend to "grow out" of risk-taking faster than males.

Figure 1: Estimated Average Impulse Control

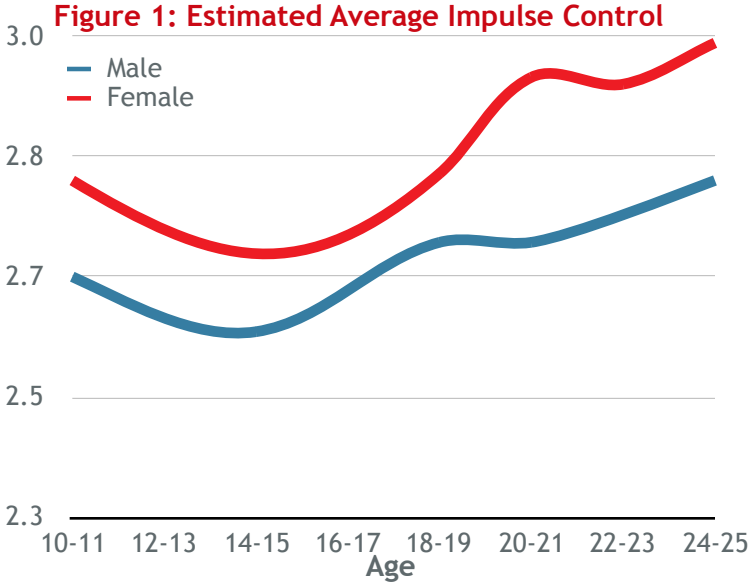
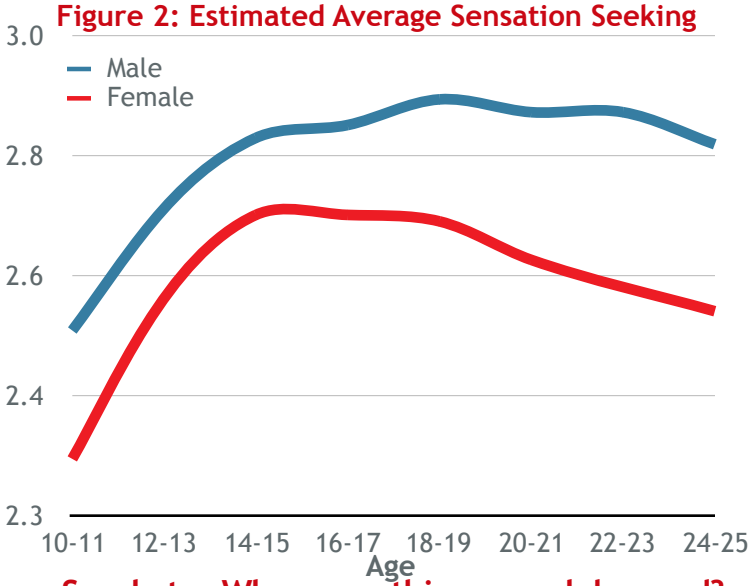


Figure 2: Estimated Average Sensation Seeking



So what — Where can this research be used?

Practitioners, Policymakers & Parents — Anyone who lives with or works with adolescents may sometimes feel that getting through to them is a never-ending battle, especially when it comes to risky behaviours. Dr. Shulman's work helps to shed light on the psychological factors that contribute to adolescents' risk-taking and the reasons for sex differences in this behaviour. The findings underscore the need for individuals working with youth to tailor their strategies to fit a youth's age and sex.

Want to read more on this research?

Find it online here: http://www.cla.temple.edu/tunl/publications/documents/Shulman_SexDifferences.pdf

Citation: Shulman, E. P., Harden, K. P., Chein, J. M., & Steinberg, L. (2015). Sex differences in the developmental trajectories of impulse control and sensation-seeking from early adolescence to early adulthood. *Journal of youth and adolescence*, *44*(1), 1-17.

Want More Information?

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