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## **SEX CHROMOSOME COMPLEMENT INFLUENCES VOLUNTARY ETHANOL CONSUMPTION IN ADOLESCENT MICE**

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Biological sex moderates aspects of alcohol use, including binge drinking during adolescence, a period of increased vulnerability for alcohol use problems. Sex/gender influences the causes and consequences of binge drinking. These sex differences may be attributable to gonadal hormone effects or to differential dosage of sex chromosome genes between the sexes; however, most research intended to elucidate the biology of sex differences in ethanol consumption and preference can rarely discriminate between the two. The Four-Core genotypes mouse model (Vries et. al., 2002) dissociates gonadal sex, and associated organizational and activational sex steroid effects, from sex chromosome complement. Accordingly, we utilized adolescent (P28) Four-Core mice and assessed voluntary ethanol (20%) drinking in a two-bottle choice test. Testing occurred during the dark phase (12 hours) in 4 consecutive sessions. XY mice of both gonadal sexes consumed more ethanol and displayed a higher preference for the ethanol bottle than did XX mice. These results suggest that inheritance of XY complement has a facilitating effect on ethanol consumption relative to the XX complement, independent of gonadal sex. These effects of XY complement on alcohol consumption could contribute to increased male vulnerability for binge drinking and alcohol abuse. Future research will seek to discover the specific genes on the sex chromosomes that underlie this effect.