

Public Abstract

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Title:Alcohol consumption, executive function and risky decision making.

Previous research has shown that alcohol intoxication can adversely affect behavior by impairing higher cognitive function (e.g., Giancola, 2000) and can lead to increased risk-taking (Leigh, 1999) via impaired executive control. The primary purpose of this project was to assess the degree to which individual differences in interference control are associated with self-reported risk-taking behaviors. Another goal of this work was to test the extent to which the link between interference control and self-reported risk-taking is moderated by alcohol intoxication. The error-related negativity (ERN) and the negative slow wave (NSW) were measured to test hypotheses concerning potential links between online regulation of cognitive control and self-reported risk-taking.

Participants were 96 male and female adults ages 21-35. Ps completed several self-report measures of risky behavior and executive function before being assigned to one of three beverage conditions: a no-alcohol control beverage, an active placebo beverage, or an alcohol beverage (1.0 g/kg ethanol). They then engaged in a laboratory cognitive control (flanker) task while their EEG (electroencephalogram) was recorded.

The relationship between behavioral performance in the task and self-reported risk-taking was significant only for participants in the Placebo group. However, a number of predicted relationships between laboratory measures of cognitive control and self-reported risk-taking behaviors did not emerge. This research suggests that effects of alcohol on the relationship between neural measures of cognitive control, task performance and self-reported real world risk behavior may be influenced more by alcohol use expectancy than by actual alcohol consumption.