

# Daily fluctuations in inhibitory control do not predict binge alcohol consumption

## Linking Daily Fluctuations in Inhibitory Control to Binge Drinking Using Ecological Momentary Assessment

Gezelle Dali, Antoinette Poulton, Robert Hester  
School of Psychological Sciences, The University of Melbourne

### INTRODUCTION

- Deficient inhibitory control is implicated in the development of alcohol abuse behaviours
- Dearth of research examining inhibitory control and binge drinking at within-subject level
- Within-individual variation in inhibitory may predict binge drinking sessions

### METHODS

1.  $N = 54$  (female, 66.70%;  $M_{age} = 20.04$ ,  $SD = 3.02$ )
2. Two smartphone apps used daily for 14 days to record alcohol consumption and complete a Stop-Signal task
3. Multilevel modelling used to predict binge drinking and total daily consumption from inhibitory control (stop-signal reaction time; SSRT)

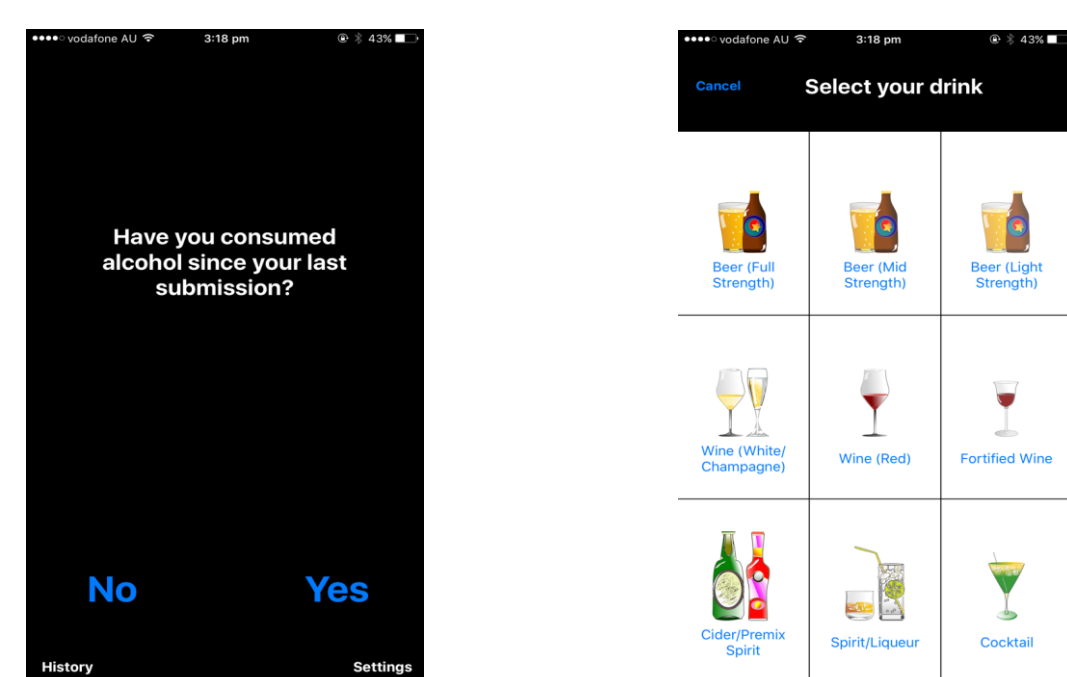


Figure 1. Screenshots of the alcohol capture application used to assess daily alcohol consumption.

### RESULTS

- Within- and between-individual variation in SSRT did not predict binge drinking nor overall alcohol consumption
- Model revealed binge sessions and total alcohol consumption increased with time and was negatively moderated by between-subject SSRT

### DISCUSSION

- Day-to-day fluctuations in inhibitory control do not predict binge drinking
- Findings converge with previous accounts that between-person variation in inhibitory control does not predict binge drinking
- Shortened stop-signal task may not be sufficiently sensitive to detect daily fluctuations in inhibitory control

The authors declare no conflict of interest.

Table 1  
Descriptive Statistics of Alcohol and Nicotine Use

	<i>M (SD)</i>	Classification
AUDIT	10.91 (5.43)	Hazardous
FTND	0.15 (0.63)	Low
B-YAACQ	9.87 (5.03)	Risky
ASSIST - Alcohol	13.94 (7.89)	Moderate

Note. AUDIT = Alcohol Use Disorders Identification Test; FTND = Fagerström Test for Nicotine Dependence; B-YAACQ = Brief Young Adult Alcohol Consequences Questionnaire; ASSIST = Alcohol, Smoking and Substance Involvement Test.

Table 2  
Alcohol Capture and Stop-Signal Task Characteristics Over 14-Day Study Period

	<i>M (SD)</i>
Total standard drinks	19.19 (17.84)
Standard drinks per day	1.57 (1.37)
Standard drinks per drinking day	5.23 (2.96)
Drinking rate per hour	2.57 (1.12)
Drinking days	3.43 (2.28)
Binge Sessions <sup>a</sup>	1.07 (1.36)
SSRT <sub>cb</sub> (ms) <sup>b</sup>	228.03 (78.92)
SSRT <sub>cw</sub> (ms) <sup>c</sup>	-206.57 (74.64)

Note. One standard drink contains 10g of ethanol (Australian Government Department of Health, 2012). SSRT = stop-signal reaction time.

<sup>a</sup>Binge sessions are defined as the consumption of four or more drinks at a rate of at least two drinks per hour.

<sup>b</sup>Subscript *cb* = between-subject

<sup>c</sup>Subscript *cw* = within-subject

Table 3  
Rate of Compliance Over 14-Day Study Period

	Compliance (%)
Alcohol Capture app	80.56
Stop-Signal task app	57.85



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