

## Drinking and the brain: careful selection of research participants required

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This letter to the editor is in response to the following publication:

Cheetham, A., Allen, N. B., Whittle, S., Simmons, J., Yücel, M., and Lubman, D. I. (2014). Volumetric differences in the anterior cingulate cortex prospectively predict alcohol-related problems in adolescence. *Psychopharmacology*, DOI: [10.1007/s00213-014-3483-8](https://doi.org/10.1007/s00213-014-3483-8).

We read with interest the recent article by Cheetham et al. (2014) examining brain structure of adolescents and the potential relationship with developing problematic drinking behavior. The data seem to indicate that anterior cingulate cortex (ACC) volume predicts the development of alcohol-related problems. The authors should be commended for conducting a longitudinal study in order to investigate this timely and important research question. And while there are multiple merits associated with this well-conducted study, we felt a few concerns warrant further attention.

First, the study did not include nondrinkers, making it impossible to determine whether ACC volume predicts problematic drinking behavior in all adolescents. If nondrinkers were included in the analysis and the findings held up, then our confidence in the conclusions

drawn would be substantially increased. Second, given the far-reaching implications of the conclusions put forth by the authors, the significant difference in marijuana use between the groups, even though acknowledged by the authors, hampers our ability to meaningfully interpret these results. Marijuana users have been shown to be more impulsive (Solowij et al. 2012) and to display altered ACC activity (Gruber et al. 2012; for review, see Lisdahl et al. 2013). Therefore, in order to accept the conclusions stated by the current authors, a more careful selection of research participants would be required.

**Conflicts of interest** The authors do not report any conflicts of interest.

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