

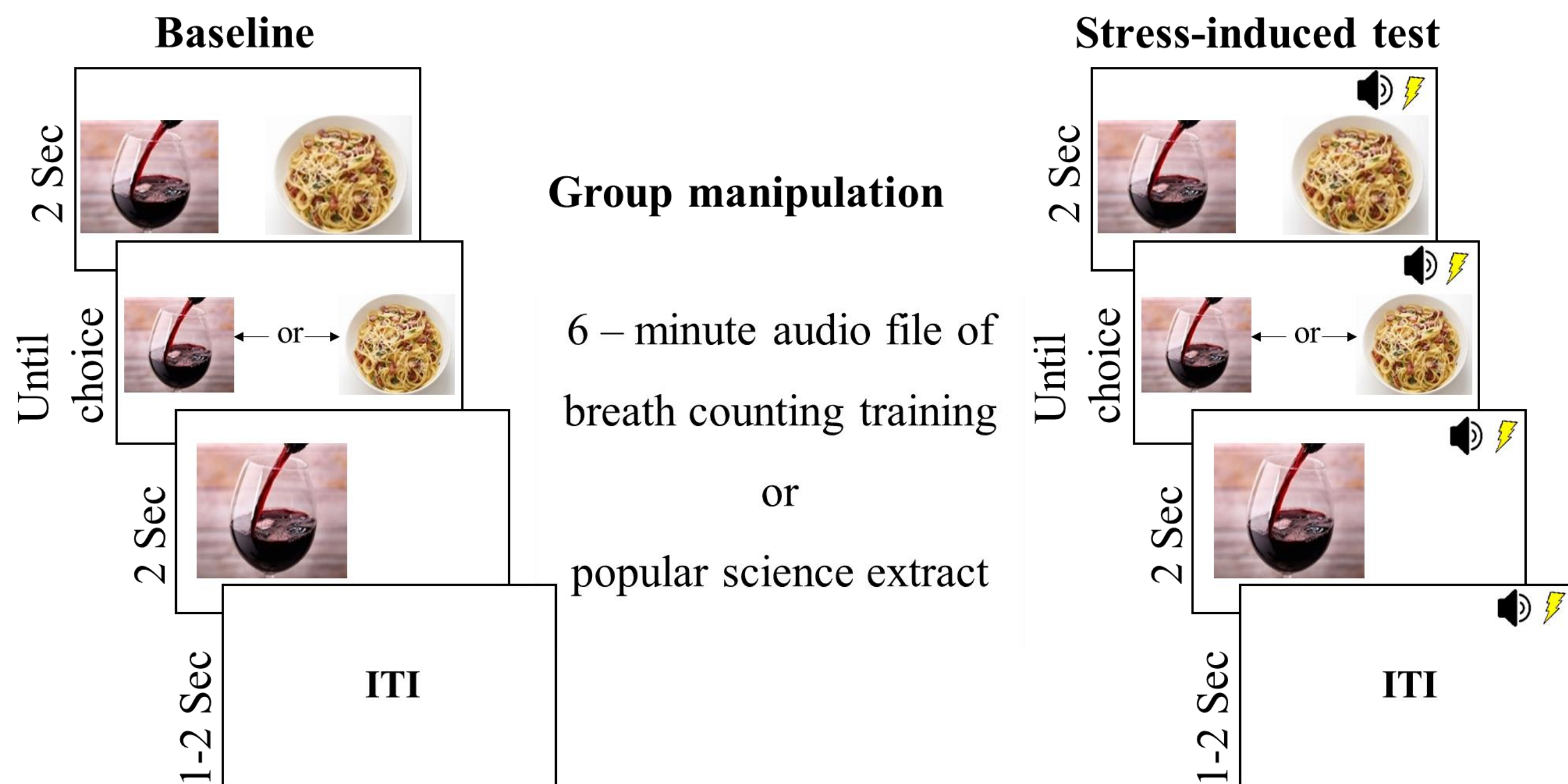
Ultra-brief breath counting (mindfulness) training promotes recovery from stress-induced alcohol-seeking in student drinkers

Introduction

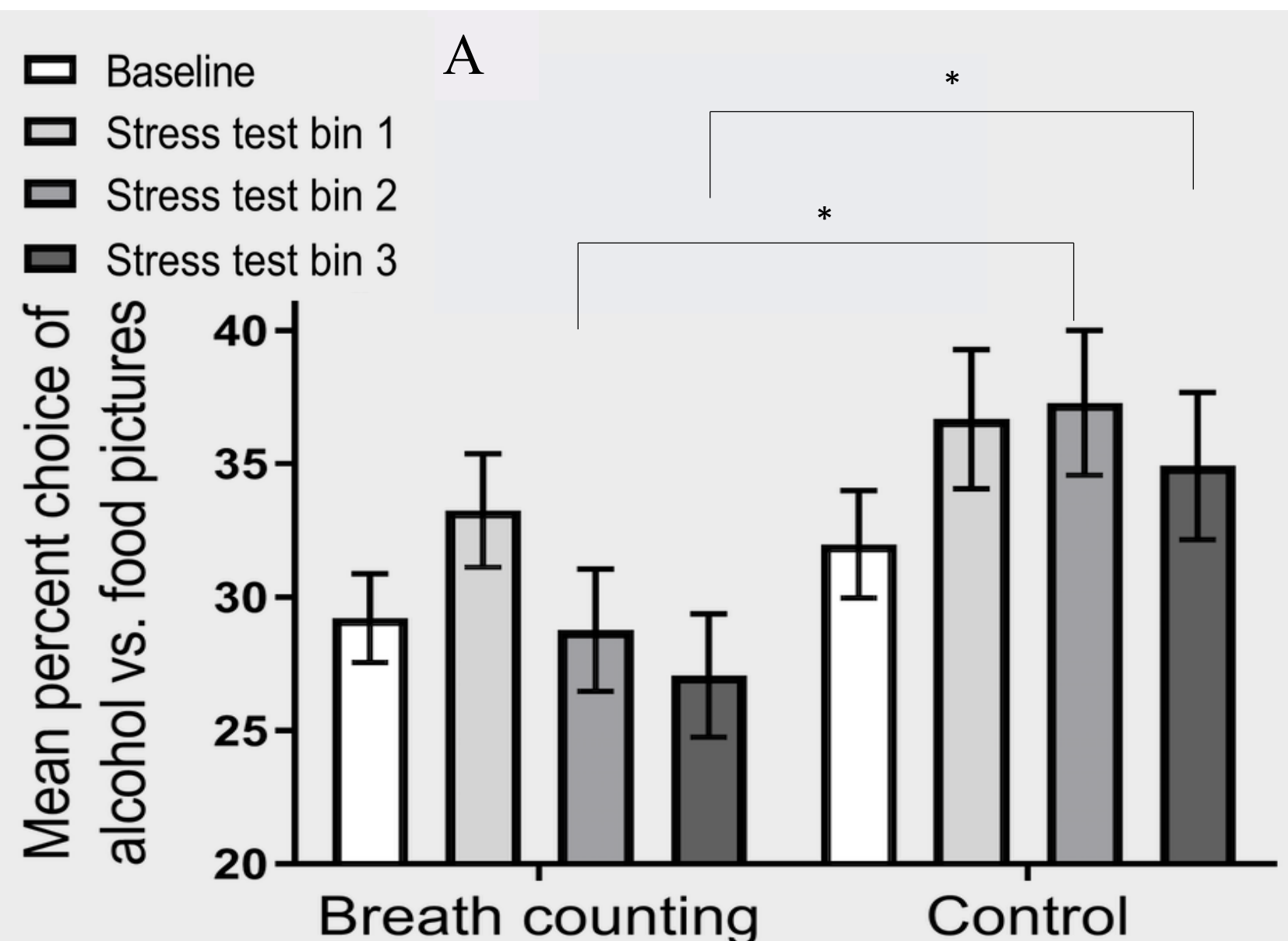
- It remains unclear how mindfulness intervention improves drinking outcomes.
- Short breath counting (attention directed to breathing) is a mindful meditation exercise that can reduce reactivity to stress induction.^{2,3}
- The current study investigated whether breath counting would attenuate a stress-induced increase in alcohol-seeking behaviour.
- This finding would suggest that mindfulness may improve drinking outcomes by building resilience to negative drinking triggers.

Methods

- Percent choice of alcohol versus food pictures (alcohol-seeking), was measured at baseline in 192 student drinkers.
- Separate groups then received a 6-minute audio file which either trained breath counting or recited a popular science extract.
- Alcohol-seeking was measured again under stress induction by a loud industrial noise.
- The breath counting group were instructed to deploy this technique during the stress test.

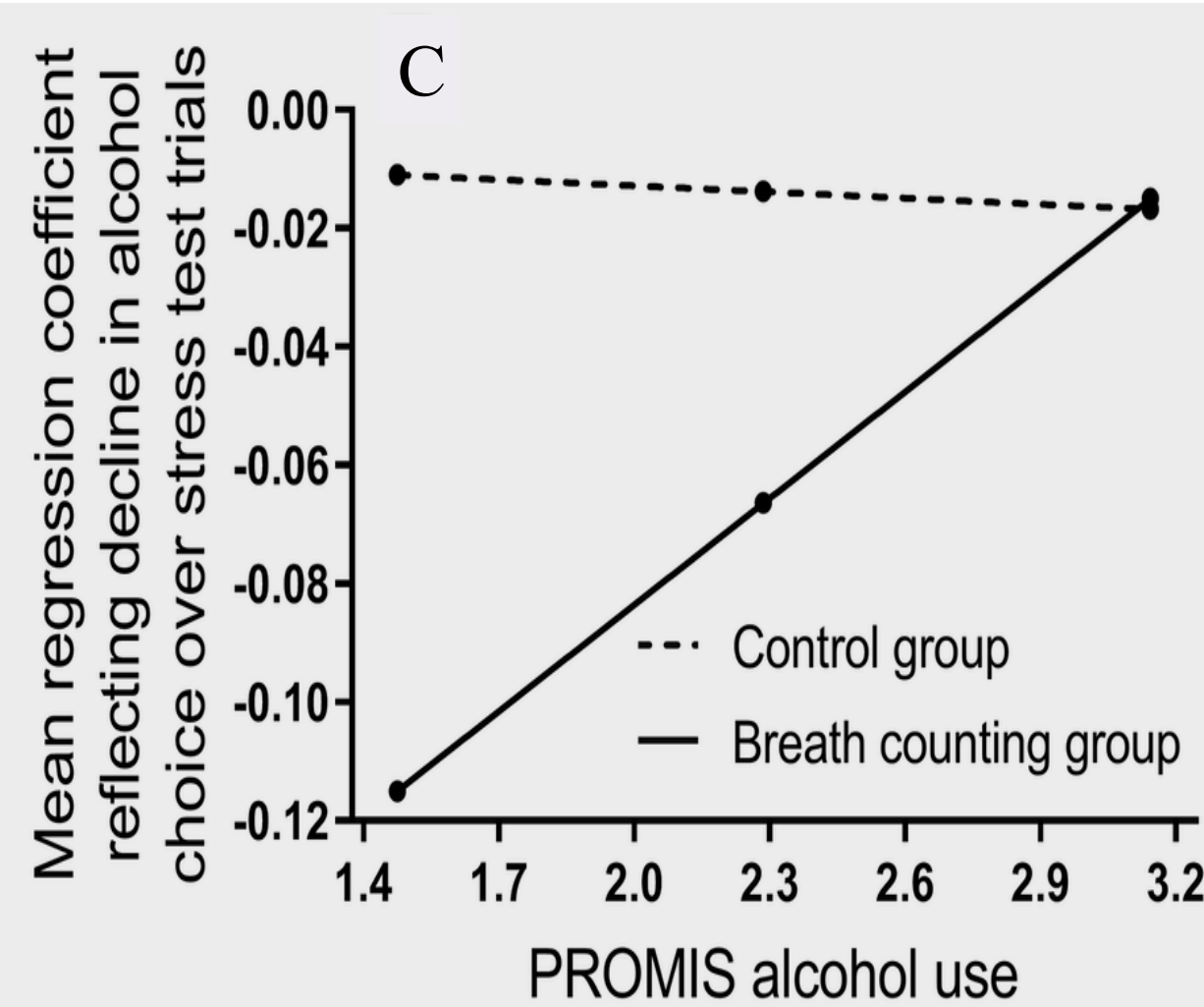
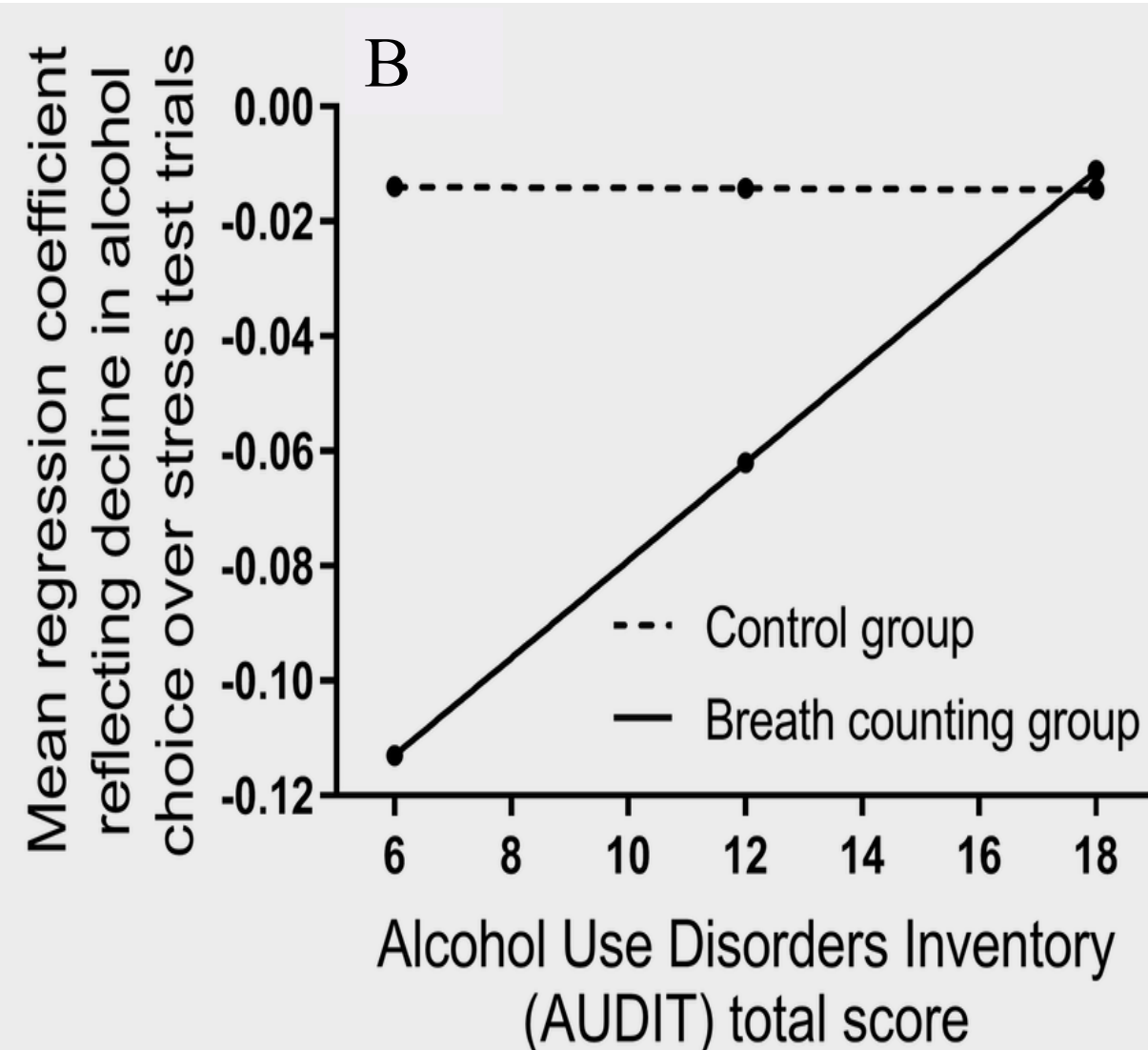


Results



Percent alcohol vs. food choice (see Figure A)

- Alcohol-seeking did not differ between groups at baseline.
- Both groups showed a significant increase in stress induced alcohol seeking at test bin 1, compared to baseline: $F(1,186) = 13.88, p < 0.001$
- Alcohol-seeking was significantly lower in the breath counting than control group at **stress test bin 2**: $F(1,186) = 5.74, p = .018$ and **bin 3**: $F(1,186) = 4.77, p = .030$.
- There was a significant linear decline in alcohol choice over stress test in the breath counting: $F(1,92) = 12.95, p = .001$, but not in the control group: $F(1,94) = 1.04, p = .311$



Moderation analysis (see Figure B and C)

Significant moderation effects: The recovery from stress induced alcohol-seeking produced by breath counting was weaker in individuals with more problematic drinking (AUDIT and PROMIS alcohol use), suggesting therapeutic limits of this strategy.

PROMIS = Patient-Reported Outcomes Measurement Information System Alcohol Use Short Form. Recovery from stress induced alcohol-seeking was quantified by calculating a regression slope for each participant relating the probability of choosing the alcohol picture over successive test trials.

Discussion

- Deployment of a briefly trained breath counting technique promoted recovery from stress induced alcohol-seeking in students.
- Breath counting produced weaker recovery from stress induced alcohol-seeking in more problematic drinkers suggesting there may be therapeutic limits in clinical samples.

References

1. Shuai, R., Bakou, A. E., Hardy, L., & Hogarth, L. (in press). Ultra-brief breath counting (mindfulness) training promotes recovery from stress-induced alcohol-seeking in student drinkers. *Addictive Behaviours*: 106141.
2. Goldin, PR and Gross, JJ (2010) Effects of mindfulness-based stress reduction (MBSR) on emotion regulation in social anxiety disorder. *Emotion* 10: 83-91.
3. Keng, S.-L., & Tan, H. H. (2018). Effects of brief mindfulness and loving-kindness meditation inductions on emotional and behavioral responses to social rejection among individuals with high borderline personality traits. *Behaviour Research and Therapy*, 100, 44-53.

