

# The Effectiveness of an Electronic Intervention Involving Personalised Alcohol Intake and Brain Health Feedback to Reduce Alcohol Misuse

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**Introduction:** Brief personalised feedback interventions delivered electronically have been identified as an efficient means of curbing alcohol intake among problem drinkers. Nonetheless, alcohol misuse remains a significant public health burden. Interventions involving feedback pertaining to both alcohol intake and brain-level alcohol use consequences are yet to be trialled. Utilising a longitudinal design, we considered the impact of providing individualised feedback – related to both alcohol consumption and cognition – on subsequent alcohol intake behaviour.

**Method:** Participants ( $N = 269$ ,  $M_{age} = 21.77$ ) were randomly assigned into control, alcohol intake feedback, or alcohol plus cognition feedback conditions. Participants ( $n = 257$ ,  $M_{age} = 21.75$ ) who completed surveys plus measures of choice impulsivity and response inhibition at Time 1 received personalised feedback via email. Alcohol intake and cognition were assessed again at Time 2 ( $M_{T2-T1days} = 65.29$ ). Changes in consumption and cognition were examined as a function of feedback group.

**Key Findings:** Across time, there were significant moderate reductions in total standard drinks consumed ( $\eta_p^2 = 0.06$ ) and binge episodes (4/4+ drinks;  $\eta_p^2 = 0.06$ ), but no effect of feedback condition. There was no change in frequency of drinking. There was a significant large decrease in harm ( $\eta_p^2 = 0.34$ ) across time, but no effect of feedback condition. Choice impulsivity remained unchanged, but there was a significant moderate improvement in response inhibition ( $\eta_p^2 = 0.07$ ).

**Discussions and Conclusions:** Regardless of condition, reductions were evident in alcohol intake (7.8%), binge episodes (9.8%), and harm (11.3%) for the whole sample. Potentially, COVID-related factors may have influenced study outcomes. Nevertheless, the act of recording intake and undertaking cognitive assessments may be sufficient at reducing alcohol intake behaviour.

**Implications for Translational Research:** Electronic-based interventions involving personalised feedback about both alcohol intake and brain health may be an effective means of reducing the public health burden of alcohol misuse.

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