

## REDUCED ATTENTIONAL RESOURCES DURING ALCOHOL HANGOVER

**Authors:** [Andrew Scholey](#)<sup>1</sup>, Elizabeth Ayre<sup>1</sup>, Chantal Terpstra<sup>1</sup>, Sarah Benson<sup>1</sup>

<sup>1</sup>Centre for Human Psychopharmacology, Swinburne University, Victoria, 3122, Australia

Presenter's email: [ascholey@swin.edu.au](mailto:ascholey@swin.edu.au)

**Introduction and Aims:** Australia loses at least 1.6 million working days per year to alcohol hangover-related absenteeism, with an economic cost of over \$3 bn. Nevertheless, the area is under-researched. The neurocognitive characteristics of hangover have not been comprehensively delineated, with no unifying hypothesis to explain them. This study used a dual attention paradigm to evaluate the hypothesis that alcohol hangover is characterised by depleted attentional resources.

**Design and Methods:** A blinded, placebo-controlled, balanced, crossover naturalistic design was utilised. Attentional load was manipulated via the presence or absence of psychomotor tracking during encoding in a word memory task. Twenty-four participants were tested: i) with a hangover and ii) without a hangover. Participants completed the Dual Attention task (+/- secondary task), then the NASA Task Loading Index measuring aspects of perceived effort during task performance.

**Results:** Compared with the control condition, hangover significantly impaired retrieval accuracy [ $F(1,23) = 16.44, p < .001$ ], speed [ $F(1,23) = 5.38, p = .03$ ] and tracking accuracy [ $F(1,21) = 5.31, p = .032$ ]. Hangover significantly negatively affected five out of six measures of perceived effort namely Mental Demand, Physical Demand, Effort, Performance and Frustration ( $p < .05$ ). Presence of the secondary task also reduced accuracy [ $F(1,23) = 5.31, p = .015$ ] showing that the dual tasking manipulation was effective.

**Discussion and Conclusions:** These results suggest that alcohol hangover severely depletes attentional resources, as measured by Dual Attention performance and perceived effort. This may account for the functional deficits in everyday behaviours associated with hangover.

**Disclosure of Interest Statement:** AS has received funding from: Abbott Nutrition, Australian Research Council, Arla Foods, Australian Wine Research Institute, Barilla, Bayer, Biotechnology and Biological Sciences Research Council, Blackmores, Cognis, Cyvex, Dairy Health Innovation Consortium, Danone, DuPont, European Commission Framework 5 Research and Innovation initiative; GlaxoSmithKline, Ginsana, Kemin Foods, Martek, Masterfoods, National Health and Medical Research Council, Naturex, Nestlé, Neurobrands, Novartis, Nutricia-Danone, Pfizer, Red Bull, Sanofi, Sen-Jam Pharmaceuticals, Verdure Sciences, Unilever, Wrigley Science Institute. SB has received funding from Red Bull, Pheonix Pharmaceutical, Kemin Foods, Sanofi Aventis and GlaxoSmithKline. The other authors have no potential conflicts of interest to disclose. No pharmaceutical grants were received in the development of this study.