**STIMULANT EFFECTS OF ENERGY DRINK WHEN MIXED WITH ALCOHOL: RESULTS FROM A DOUBLE-BLIND PLACEBO-CONTROLLED TRIAL**

Verster JC[1,2], van Andel N[1], van Gelder CAGH[1], Janssen BSG[1], Titulaer J[1], Jansen J[1], van de Loo AJAE[1]

[1] Utrecht University, Utrecht, The Netherlands, [2] Swinburne University, Melbourne, Australia.

**Introduction and Aims:** It has been suggested that consuming alcohol mixed with energy drink (AMED) increases subjective alertness relative to consuming alcohol only (AO), which then may result in a prolonged drinking session with increased alcohol consumption. The aim of this double-blind, crossover, placebo-controlled study was to examine if consuming AMED has an effect on alertness-sleepiness ratings when compared to consuming AO.

**Design and Methods:** N=56 healthy volunteers participated in the study. At two test days, subjects received alcohol to achieve a breath alcohol concentration (BAC) of 0.08%, mixed with either 250 ml Red Bull energy drink or 250 ml placebo energy drink. They rated their alertness-sleepiness on the Karolinska Sleepiness Scale (KSS), ranging from 1 (extremely alert) to 9 (very sleepy, fighting sleep), at baseline (BAC 0%) and at BAC 0.08%, 0.05%, 0.02%. Scores of the AMED and AO condition, at each BAC level, were compared using paired t-tests.

**Results:** A significant decrease in sleepiness scores was observed after consuming AMED relative to AO at BAC 0.05% ($p<0.0001$). However, the observed difference between AMED (3.79±1.51) and AO (4.75±1.59) was small. At other BAC levels no significant differences were observed between AMED and AO. All alertness-sleepiness scores after AMED and AO ranged between 3 (alert) and 5 (neither alert, nor sleepy), suggesting that both a BAC up to 0.08%, nor the addition of energy drink has a relevant impact on alertness-sleepiness.

**Discussion and Conclusions:** Mixing alcohol with energy drink does not have a relevant effect on subjective assessment of alertness-sleepiness.

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