

## THE EFFECTS OF MIXING ALCOHOL WITH CAFFEINATED BEVERAGES ON SUBJECTIVE INTOXICATION

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**Introduction:** It has been suggested that mixing alcohol with energy drinks (AMED) and other caffeinated beverages may alter the awareness of intoxication. The proposed reduction in subjective intoxication, also called “the masking effect”, may have serious consequences by increasing the likelihood of engaging in potentially dangerous activities such as driving while intoxicated.

**Aim:** The aim of this meta-analysis was to determine if mixing alcohol with caffeinated beverages alters subjective intoxication.

**Methods:** A literature search was conducted (August 21<sup>st</sup>, 2012) to collect all studies measuring subjective intoxication after administration of AMED, or other caffeinated alcoholic drinks compared to alcohol only. To this extent, PubMed and Embase were searched using the key words “alcohol”, “caffeine”, “energy drinks” and “intoxication”. The studies were critically reviewed and, where possible, included in a meta-analysis in order to determine whether masking exists after mixing alcohol with caffeinated beverages.

**Results:** Twelve studies were identified of which 8 could be used for the meta-analysis. When including higher caffeine doses (4 mg/kg) the meta-analysis revealed no significant masking effect ( $p=0.477$ ). Similarly, when including lower caffeine doses (2 mg/kg) no significant masking effect was found ( $p=0.434$ ). Despite the large range of caffeine content (46 - 383 mg) and alcohol levels (0.03% - 0.12% BAC) investigated, caffeine had no effect on the correct judgment of subjective intoxication.

**Conclusion:** Mixing alcohol with energy drink or other caffeinated beverages does not alter subjective intoxication.