

## **Acute tolerance to the effect of alcohol on Inspection Time and subjective intoxication**

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### **Introduction and Aims:**

Acute tolerance to alcohol is a rapid decrease in the dose-effect, occurring within the duration of a dose. A decreased dose-effect can be shown within a dose's duration by comparing the drug-effect between two time points with an equal blood alcohol concentration (BAC). The aim of this study was to test acute tolerance in visual information processing speed using the Inspection Time Task (ITT), and in ratings of subjective intoxication.

### **Method:**

After a baseline measure of ITT, participants were given either a dose of alcohol calculated to produce a peak BAC of .07%, or a placebo. Participants in the placebo group were anchored to dosed participants and tested at equivalent times. BAC and subjective intoxication ratings were taken at multiple time-points to track the course of BAC. Participants completed the ITT again when BAC reached .05% while ascending, and again at .05% when descending.

### **Results:**

Consistent with alcohol induced impairment, Inspection Time was significantly slower in the alcohol group on the ascending limb ( $p = .021$ ). However, differences between groups were not significant for measures taken on the descending limb ( $p = 0.367$ ), consistent with an acute tolerance effect.

Both groups gave higher ratings of subjective intoxication earlier during testing, but the alcohol group showed a greater decrease between limbs. Consistent with acute tolerance, ratings of subjective intoxication in the alcohol group decreased significantly between limbs ( $p < .01$ ).

### **Conclusion:**

The dose-effect of alcohol on visual information processing speed, and subjective intoxication was found to decrease within the duration of a dose of alcohol.