

ALCOHOL INTOXICATION GOGGLES (FATAL VISION GOGGLES) CAN BE USED TO DETECT ALCOHOL RELATED IMPAIRMENT IN SIMULATED DRIVING

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Introduction and Aims: Fatal Vision Goggles (FVG) are image distorting equipment used within health education programs to simulate alcohol-related impairment. However, no empirical evidence exists to support this assumption. The purpose of this study was to determine the validity of FVG to produce alcohol-related impairment in simulated driving.

Design and Methods: Twenty-two healthy males (age: 23±3 yrs, Mean±SD) participated in a placebo-controlled crossover design study involving 5 experimental trials. In each trial, participants completed a baseline (BSL) driving task followed by an experimental driving task, involving one of 5 treatments: (1) a dose of alcohol designed to elicit 0.080% BrAC (AB), (2) an alcohol placebo (PB), (3) FVG (estimated %BAC 0.070-0.100+) (AG), (4) placebo goggles (PG) and (5) FVG with an additional cognitive load (CL). Primary measures of driving performance included standard deviation of lane position (SDLP), distance headway (DH) and reaction time to 2-choice stimuli (CRT).

Results: Neither placebo treatment affected simulated driving performance. In contrast, significantly greater changes in SDLP were observed on the AG and AB (~0.060-0.063% BrAC) trials compared to corresponding BSL drives. The AG trial was also associated with a significant reduction in DH compared to BSL. Neither AB nor AG trials were influential on CRT. However, response latency significantly increased with the CL treatment compared to BSL.

Discussion and Conclusions: FVG appear to have some utility in replicating alcohol-related impairment in simulated driving. These findings support the use of FVG in driver education programs and future research investigating alcohol-induced effects on simulated driving.

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