

Joint and individual effectiveness of galvanic cutaneous stimulation and tactile stimulation at decreasing Simulator Adaptation Syndrome

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This research was focused on investigating the effectiveness of galvanic cutaneous stimulation and tactile stimulation jointly and individually at mitigating Simulator Adaptation Syndrome. Forty drivers (mean age = 23.1 ± 3.4 years old, twenty women) participated in a driving simulation experiment. Total scores of the Simulator Sickness Questionnaire, head movements (an index of body balance), and driving performance variables were compared across four different stimulation conditions: i) baseline (where no stimulation was presented), ii) galvanic cutaneous stimulation and iii) tactile stimulation deployed individually, and iv) both techniques deployed jointly. The results showed that both techniques presented in conjunction alleviate Simulator Adaptation Syndrome and improve driving performance more effectively than when they are presented in isolation. Importantly, reduced head movements were only revealed when galvanic cutaneous stimulation was applied. We concluded that the reduction of this syndrome is due to an improvement of body balance (elicited by galvanic cutaneous stimulation), and a distraction from the symptoms (elicited by tactile stimulation). We encourage the use of both techniques simultaneously to decrease Simulator Adaptation Syndrome.

Indexed keywords

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