

**Promethazine as a motion sickness treatment: impact on human performance and mood states.**

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**PURPOSE:** Intramuscular (i.m.) injections of promethazine in 25 mg or 50 mg dosages are commonly used to treat space motion sickness in astronauts. The present study examined the effects of i.m. injections of promethazine on performance, mood states, and motion sickness in humans. **METHODS:** Subjects were 12 men, mean age 36 + 3.1, who participated in 1 training day and 3 treatment conditions: a 25-mg injection of promethazine, a 50-mg injection of promethazine, and a placebo injection of sterile saline. Each condition, scheduled at 7-d intervals, required an 8-10-h day in which subjects were tested on 12 performance tasks, and were given a rotating chair motion sickness test. On the training day subjects were trained on each task to establish stability and proficiency. Treatment conditions were counterbalanced and a double-blind procedure was used to administer the medication or placebo. **RESULTS:** Statistically significant decrements in performance were observed for both dosages of promethazine as compared with the placebo. Performance decrements were associated with mean blood alcohol dose equivalency levels of 0.085% for 25 mg and 0.137% for 50 mg doses. Mood scale results showed significant changes in individual subjective experiences with maximum deterioration in the arousal state and fatigue level. Only the 25-mg dosage significantly increased motion sickness tolerance when compared with the placebo. **CONCLUSIONS:** These data suggest that effective doses of promethazine currently used to counteract motion sickness in astronauts may significantly impair task components of their operational performance.