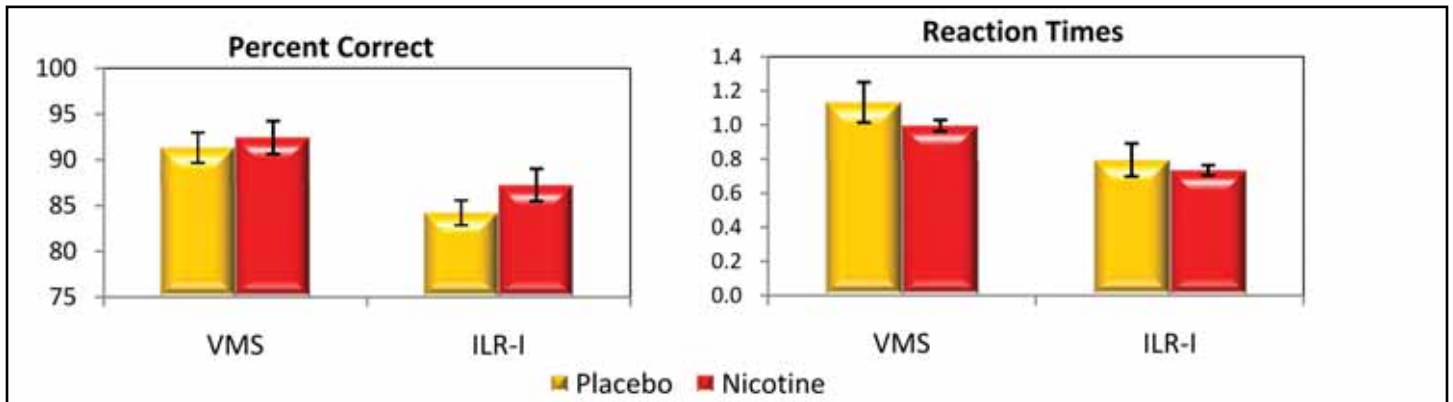
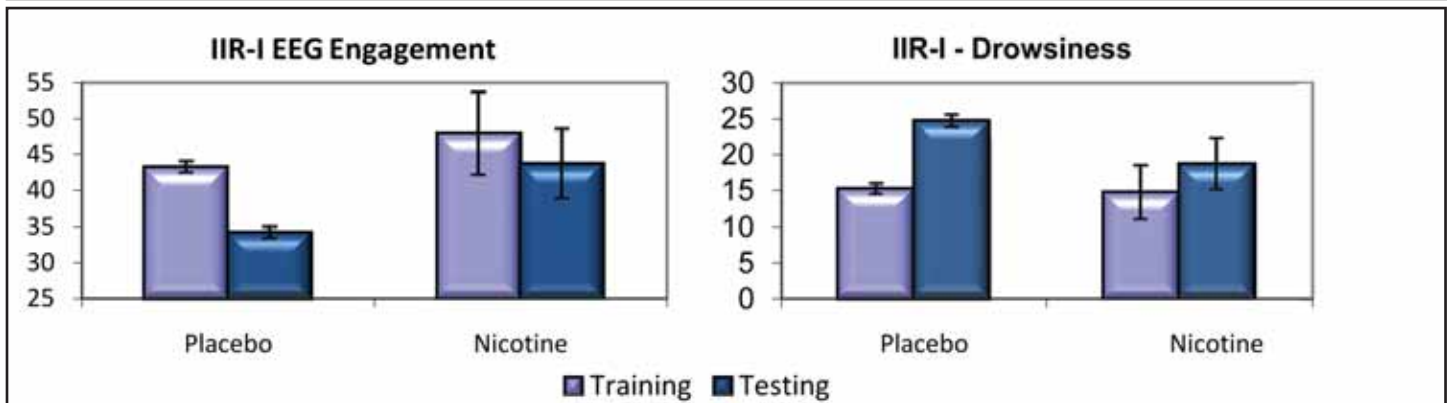
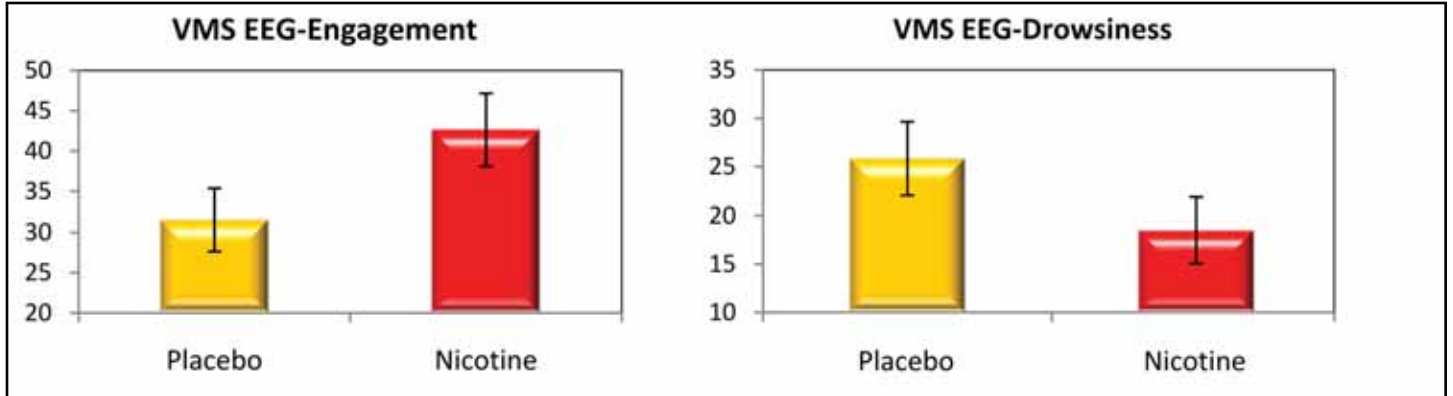
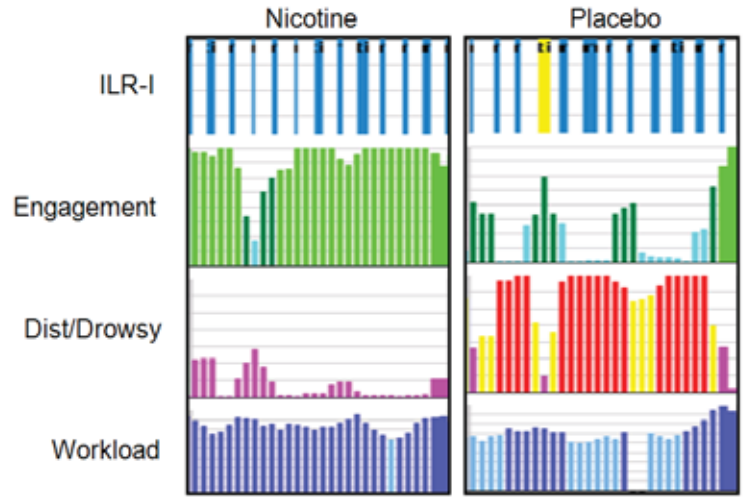


Effect of Nicotine and Withdrawal on Attention, Memory and Workload

Despite the widely publicized health risks of smoking, an estimated 25% of the U.S. population and between 25% - 37% of military personnel continues to smoke. The use of nicotine as a fatigue countermeasure may be problematic in operational environments because the stimulant properties may increase speed while sacrificing accuracy.

In this randomized cross over design, the Alertness and Memory Profiler's Verbal Memory Scan (VMS) and, Image Learning and Recognition with Interference (ILR-I) tasks assessed neurophysiology and performance in cigarette smokers following 14 mg. transdermal nicotine administration vs. placebo nicotine patch. The results show that nicotine induces an excessive allocation of attentional engagement. After just 12 hours of nicotine withdrawal, fully-rested and otherwise healthy participants evidenced significant increases in EEG drowsiness and impaired performance on learning and memory tests.



Berka, C., D. Levendowski, et al. (2006). Nicotine Administration and Withdrawal Effects on EEG metrics of Attention, Memory and Workload: Implications for Cognitive Resource Allocation. *Augmented Cognition: Past, Present and Future*. D. Schmorow, K. Stanney and L. Reeves. Arlington, VA, Strategic Analysis, Inc.: 174-183.