

# The combined effects of ethanol and amphetamine sulfate on performance of human subjects.

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## The Combined Effects of Ethanol and Amphetamine Sulfate on Performance of Human Subjects

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### Abstract

The combined effects of ethanol and amphetamine on the performance of selected tests were evaluated. No differences were shown between the effects of ethanol-amphetamine and ethanol-lactose on the performance of balance, skipping, Minnesota manipulation, Purdue peg board, Maudsley Personality Inventory, pursuit rotor or digit span tests; but ethanol plus amphetamine produced less impairment of performance of coding, mental addition, and trail making tests than did ethanol plus a placebo. Ethanol increased the errors in performance of the Wonderlic Personnel Test, but the simultaneous administration of amphetamine did not reduce this effect. Conversely, amphetamine reduced the test-retest reliability of the Wonderlic Personnel Test, but alcohol appeared to counteract this effect of amphetamine. These experiments indicate that, when ethanol and amphetamine are used

together, each drug modifies some of the effects produced by the other in a manner that cannot be predicted on the assumption that a depressant versus stimulant competition is operative.

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WALSH AND OTHERS: ETHANOL AND AMPHETAMINE TOXICITY

**The Combined Effect of Ethanol and Amphetamine Salts on Performance of Human Subjects**

LESTER WALSH, M.A., JACK D. TAYLOR, B.S., CHARLES W. TORRES, and DONALD F. CAMPBELL, M.D., ITHACA, N.Y.

**ABSTRACT**

The combined effect of ethanol and amphetamine salts on performance of human subjects was studied. The subjects were divided into four groups: control, ethanol, amphetamine, and ethanol plus amphetamine. The subjects performed a series of tests including a simple reaction time test, a choice reaction time test, a visual search test, and a memory test. The results showed that ethanol and amphetamine both had significant effects on performance, and the combination of the two had a synergistic effect. The ethanol group showed a significant decrease in reaction time, while the amphetamine group showed a significant increase in reaction time. The combination group showed a significant decrease in reaction time compared to the ethanol group and a significant increase in reaction time compared to the amphetamine group. The visual search test showed a significant decrease in accuracy for the ethanol group and a significant increase in accuracy for the amphetamine group. The memory test showed a significant decrease in accuracy for the ethanol group and a significant increase in accuracy for the amphetamine group. The combination group showed a significant decrease in accuracy compared to the ethanol group and a significant increase in accuracy compared to the amphetamine group.

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**Methods**

The subjects were divided into four groups: control, ethanol, amphetamine, and ethanol plus amphetamine. The subjects performed a series of tests including a simple reaction time test, a choice reaction time test, a visual search test, and a memory test. The results showed that ethanol and amphetamine both had significant effects on performance, and the combination of the two had a synergistic effect. The ethanol group showed a significant decrease in reaction time, while the amphetamine group showed a significant increase in reaction time. The combination group showed a significant decrease in reaction time compared to the ethanol group and a significant increase in reaction time compared to the amphetamine group. The visual search test showed a significant decrease in accuracy for the ethanol group and a significant increase in accuracy for the amphetamine group. The memory test showed a significant decrease in accuracy for the ethanol group and a significant increase in accuracy for the amphetamine group. The combination group showed a significant decrease in accuracy compared to the ethanol group and a significant increase in accuracy compared to the amphetamine group.

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**Results**

The results showed that ethanol and amphetamine both had significant effects on performance, and the combination of the two had a synergistic effect. The ethanol group showed a significant decrease in reaction time, while the amphetamine group showed a significant increase in reaction time. The combination group showed a significant decrease in reaction time compared to the ethanol group and a significant increase in reaction time compared to the amphetamine group. The visual search test showed a significant decrease in accuracy for the ethanol group and a significant increase in accuracy for the amphetamine group. The memory test showed a significant decrease in accuracy for the ethanol group and a significant increase in accuracy for the amphetamine group. The combination group showed a significant decrease in accuracy compared to the ethanol group and a significant increase in accuracy compared to the amphetamine group.

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**Discussion**

The results of this study indicate that ethanol and amphetamine have synergistic effects on human performance. The ethanol group showed a significant decrease in reaction time, while the amphetamine group showed a significant increase in reaction time. The combination group showed a significant decrease in reaction time compared to the ethanol group and a significant increase in reaction time compared to the amphetamine group. The visual search test showed a significant decrease in accuracy for the ethanol group and a significant increase in accuracy for the amphetamine group. The memory test showed a significant decrease in accuracy for the ethanol group and a significant increase in accuracy for the amphetamine group. The combination group showed a significant decrease in accuracy compared to the ethanol group and a significant increase in accuracy compared to the amphetamine group.

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**Conclusions**

The study concludes that ethanol and amphetamine have synergistic effects on human performance. The ethanol group showed a significant decrease in reaction time, while the amphetamine group showed a significant increase in reaction time. The combination group showed a significant decrease in reaction time compared to the ethanol group and a significant increase in reaction time compared to the amphetamine group. The visual search test showed a significant decrease in accuracy for the ethanol group and a significant increase in accuracy for the amphetamine group. The memory test showed a significant decrease in accuracy for the ethanol group and a significant increase in accuracy for the amphetamine group. The combination group showed a significant decrease in accuracy compared to the ethanol group and a significant increase in accuracy compared to the amphetamine group.

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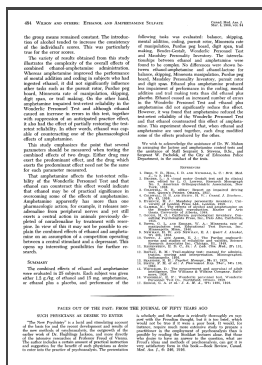
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