Thomas Jefferson University Study Showed MC Square Improves Attention and Concentration

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PHILADELPHIA, May 25 /PRNewswire/ -- Global Technology Group has announced that the Jefferson Medical College of Thomas Jefferson University has conducted a behavior study on the improvement of attention and concentration with the MC Square device. The study results showed statistically reliable improvement in attention and concentration. Dr. Tracy who led the research will hold a press conference on the results on May 31st, 2006 at 3:00PM at the Inn at Penn, Hilton Hotel in Philadelphia, PA.

The study result follows:

PRINCIPAL INVESTIGATORS:	Joseph Tracy, Ph.D, Associate Professor of Neurology, Jefferson Medical College of Thomas Jefferson University, Philadelphia, PA. Michael Sperling, M.D., Director, Jefferson Comprehensive Epilepsy Center, Baldwin Keyes Professor & Vice Chairman for Clinical Affairs of Neurology, Jefferson Medical College of Thomas Jefferson University Noman Ahmed, M.D., Research Associate
CONTEXT & OBJECTIVE:	The MC Square device was tested for its ability to improve cognitive performance in healthy, normal individuals. The MC Square uses an eyeglasses-like device to present light and sound in a fashion that is proposed to influence brain activity. The device is considered by the company to promote relaxation and enhance cognitive skills such as attention, learning, and memory.
DESIGN & SETTING:	The study was designed to specifically test whether training with the device compared to training with a placebo could improve attention, learning, memory. The cognitive tasks chosen all involved verbal material. Verbal episodic memory, verbal associative learning, verbal working memory, and attention/concentration for verbal material were all tested. These tasks involve new material that require effort and skill to complete successfully. Thus, these tests should be sensitive to any direct effect of the MC Square device on learning and cognitive performance. A control task involving a multiple choice vocabulary problems was included and here no improvement related to the MC Square device was expected. Participants were carefully screened to insure good health and the absence of photosensitive epilepsy, a potential risk factor when using the device.
INTERVENTIONS:	Thirty-nine participants were trained to use the MC Square and a placebo device. The placebo device was similar in all respects to the MC Square device except that the lights were presented in a random, not systematic Fashion (the sound pattern was the same). Participants underwent equivalent cognitive assessments both before and after training with each type of device. The order in which a participant received the devices was randomized (MC Square/placebo or placebo/MC Square). Key statistical comparisons compared subjects' performance to themselves, looking to see if a change in cognitive performance occurred after training, with a particular interest in comparing whether the change was greater for the MC Square device relative to the placebo.

RESULTS: Results for the MC Square device showed statistically reliable improvement (improvement not related to chance that is reproducible) in the measure of attention and concentration using the Digit Span Forward Test. The MC Square device had no effect on vocabulary performance as expected, further confirming the validity of the findings. The improvement in attention/concentration held true even after accounting for the participant's baseline level of skill on the attention test. Although the sample as a whole were normal on measures of anxiety and general nervousness, we still checked to see if anxiety could explain the above effect on attention and it did not.

A total of 24 out of 39 subjects (61.5%) showed at least a half standard deviation improvement (an average increase of 1.3 digits recalled, up from 7.3 digits) on the digit span task following training with the device. (Note: The task involved listening to and then reciting back digits, much like reciting a phone number that was just heard.)

This may be of practical benefit in terms over holding on to more "heard" information over the short term.

In terms of performance on the individual tests, ignoring the training aspect of the study, when using the MC Square device subjects showed generally better performance on a working memory measure, the attention measure and aspects of the associative learning test, but these effects can only be considered trends as they were not statistically reliable after accounting for potential error rates that can occur when conducting multiple statistical tests.