The Neurocognitive Effects Of A Conducted Electrical Weapon Compared To High Intensity Interval Training And Alcohol Intoxication: Implications For Miranda And Consent

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BACKGROUND: Conducted electrical weapons (e.g., TASER) are purported to impair short-term neurocognitive functioning, which may affect the ability of perpetrators to understand their Miranda rights.

METHODS: In this observational study coordinated at Lompoc Valley (CA) Medical Center, the authors compared the neurocognitive effects of a standardized 5-second TASER shot, a 90-second high-intensity interval training exercise, low level alcohol intoxication (blood alcohol 0.12 or lower), high level alcohol intoxication (blood alcohol above 0.12), and a control condition in 115 adult volunteers (mean age 32 years; 87% male). Results on the Automated Neuropsychological Assessment Metrics battery (subtests for procedural reaction time, matching to sample, and logical relations) were compared among groups at baseline and at 10, 35, 60, and 85 minutes after exposure.

RESULTS: For all three tests, only the group with high level alcohol intoxication differed significantly from all others, with worse performance at 10 minutes (all comparisons, p≤0.0002); performance in this group had not returned to pre-exposure competency by 85 minutes. Procedural reaction time was somewhat impaired with TASER exposure, but results were not statistically significant and study power was limited. Other study limitations included nonrandomized group assignment and omission of some test results and participants (e.g., excessive intoxication). The study was conducted at TASER International.

CONCLUSIONS: Neurocognitive changes after TASER exposure appear to be transient and nonsignificant. Given that alcohol intoxication does not invalidate Miranda waiver or consent, it is suggested that the effects of TASER exposure should have no legal significance.

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EDITOR’S COMMENTARY: The authors of this study compared the cognitive effect of being TASERed to alcohol intoxication and high intensity interval training. The authors found that the cognitive impact of being TASERed was only temporary and insignificant. They concluded that being exposed to a TASER should not interfere with medical decision making.