

## **US Department of Justice, National Institute of Justice (2011)**

### **Study of Deaths Following Electro-Muscular Disruption (Taser)**

"All evidence suggests that the use of CEDs carries with it a risk as low as or lower than most alternatives"

"There is currently no medical evidence that CEDs pose a significant risk for induced cardiac dysrhythmia in humans when deployed reasonably."

"The risks of cardiac arrhythmias or death remain low and make CEDs more favorable than other weapons."

"The literature suggests a substantial safety margin with respect to the use of CEDs when they are used according to manufacturer's instructions."

"90% less suspect Injuries"

"CED use is associated with a significantly lower risk of injury than physical force, so it should be considered as an alternative in situations that would otherwise result in the application of physical force."

## **American Academy of Emergency Medicine Clinical Practice Committee Recommendations (2010)**

### **Study if Evaluations Are Needed in Emergency Department Patients after a TASER Device Activation?**

"The current human literature has not found evidence of dangerous laboratory abnormalities, physiologic changes, or immediate or delayed cardiac ischemia or dysrhythmias after exposure to CEW electrical discharges of up to 15 seconds."

"Therefore the current medical literature does not support routine performance of laboratory studies, EKGs, or prolonged Emergency Department (ED) observation or hospitalization for ongoing cardiac monitoring after CEW exposure in an otherwise asymptomatic awake and alert patient."

## **ECD Injury Study (Police Quarterly 2010)**

### **Study of the Effect of Less Lethal Weapons on Injuries in Police Use of Force Events**

"We analyzed data from 12 police departments that documented injuries to officers and civilians in 24 380 cases. We examined monthly injury rates for 2 police departments before and after their adoption of CEDs."

"Odds of injury to civilians and officers were significantly lower when police used CED weapons, after control for differences in case attributes and departmental policies restricting use of these weapons. Monthly incidence of injury in 2 police departments declined significantly, by 25% to 62%, after adoption of CED devices."

## **Police Executive Research Forum, Washington D.C. (2010)**

### **Study of CED Related to Reduction in Officers/Suspects Injuries**

We conducted a quasi-experiment to compare 4 years of data from seven law enforcement agencies (LEAs) with CED deployment with six matched LEAs without CED deployment. Compared with non-CED sites, CED sites had lower rates of officer injuries, suspect severe injuries, and officers and suspects receiving injuries requiring medical attention. Our results suggest that CEDs can be effective in helping minimize physical struggles and resulting injuries in use-of-force cases.

## **Department of Emergency Medicine, State University of New York (2010)**

### **Study of Prolonged CEW Exposure on Alcohol Intoxicated Adult Subjects**

Prolonged continuous CEW exposure in the setting of acute alcohol intoxication has no clinically significant effect on subjects in terms of markers of metabolic acidosis. The acidosis seen is consistent with what occurs with ethanol intoxication or moderate exertion.

## **Department of Emergency Medicine, Hennepin County Medical Center, Minnesota (2009)**

### **Study of sudden death of subjects in police custody**

Background: Conducted electrical weapons (CEWs) are used by law enforcement for control of subjects by causing neuromuscular incapacitation. There has been scrutiny of CEWs and their potential role in the occasional sudden death of subjects in custody. There is a hypothesized causal relationship due to induced cardiac dysrhythmia. Previous work has not shown dysrhythmia induction in resting humans. However, these devices are not often used on resting individuals in the field.

Objective: We sought to determine if exposure to a CEW in a physically exhausted human sample population caused detectable change in the 12-lead electrocardiogram (ECG).

Conclusions: Prolonged CEW application in an exhausted human sample did not cause a detectable change in their 12-lead ECGs. Theories of CEW-induced dysrhythmia in non-rested humans are not supported by our findings. (c) 2009 Elsevier Inc.

## **American Medical Association TASER Statement (2009)**

### **AMA Adopts New Public Health Policies at Annual Meeting**

An AMA report finds that Tasers, when used appropriately, can save lives during interventions that would have otherwise involved the use of deadly force.

## **Department of Emergency Medicine, Wake Forest University School of Medicine (2009)**

### **Study of Injuries related to Law Enforcement's Use of Taser**

Conducted electrical weapons such as the Taser are commonly used by law enforcement agencies. The safety of these weapons has been the subject of scrutiny and controversy; previous controlled studies in animals and healthy humans may not accurately reflect the risks of conducted electrical weapons used in actual conditions. We seek to determine the safety and injury profile of conducted electrical weapons used against criminal suspects in a field setting.

Conducted electrical weapons were used against 1,201 subjects during 36 months. One thousand one hundred twenty-five subjects (94%) were men; the median age was 30 years (range 13 to 80 years). Mild or no injuries were observed after conducted electrical weapon use in 1,198 subjects (99.75%; 95% confidence interval 99.3% to 99.9%). Of mild injuries, 83% were superficial puncture wounds from conducted electrical weapon probes. Significant injuries occurred in 3 subjects (0.25%; 95% confidence interval 0.07% to 0.7%), including 2 intracranial injuries from falls and 1 case of rhabdomyolysis. Two subjects died in police custody; medical examiners did not find conducted electrical weapon use to be causal or contributory in either case.

To our knowledge, these findings represent the first large, independent, multicenter study of conducted electrical weapon injury epidemiology and suggest that more than 99% of subjects do not experience significant injuries after conducted electrical weapon use.

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- "Medical examiners did not find conducted electrical weapon use to be causal or contributory in either case of death after CEW use."
- "Mild or no injuries were observed after conducted electrical weapon use in 1,198 subjects (99.75%; 95% confidence interval 99.3% to 99.9%)"

## **PERF (Police Executive Research Forum) Study (2009)**

### **Comparison Study of Agencies using Tasers during Use of Force Incidents v. Agencies without Tasers**

"Overall, the study showed that use of CEDs is associated with a 70-percent reduction in the chances of an officer being injured compared to agencies that do not use CEDs."

"...the odds of a suspect being injured are reduced by more than 40 percent in CED agencies compared to non-CED agencies."

"All in all, we found consistently strong effects for CEDs in increasing the safety of officers and suspects"

"Not only are CED sites associated with greater levels of safety compared to a matched group of non-CED sites, but also within CED agencies, in some cases the actual use of a CED by an officer is associated with a higher level of safety compared to incidents in which officers used other types of less lethal weapons, such as batons."

**The Department of Emergency Medicine, University of California  
(2009)**

**The Study of the Physiological Effects of Taser Exposure**

**Objectives:** Incidents of sudden death following TASER exposure are poorly studied, and substantive links between TASER exposure and sudden death are minimal. The authors studied the effects of a single TASER exposure on markers of physiologic stress in humans.

**Conclusions:** A 5-second exposure of a TASER following vigorous exercise to healthy law enforcement personnel does not result in clinically significant changes in ventilatory or blood parameters of physiologic stress.

**Division of Cardiology, Cedars Sinai Medical Center, Los Angeles, CA.  
(2009)**

**Presenting rhythm in sudden deaths temporally proximate to discharge of TASER conducted electrical weapons.**

**OBJECTIVES:**

Sudden deaths proximate to use of conducted electrical weapons (CEWs) have been attributed to cardiac electrical stimulation. The rhythm in death caused by rapid, cardiac electrical stimulation usually is ventricular fibrillation (VF); electrical stimulation has not been reported to cause asystole or pulseless electrical activity (PEA). The authors studied the presenting rhythms in sudden deaths temporally proximate to use of TASER CEWs to estimate the likelihood that these deaths could be caused by cardiac electrical stimulation.

**CONCLUSIONS:**

In sudden deaths proximate to CEW discharge, immediate collapse is unusual, and VF is an uncommon VF presenting rhythm. Within study limitations, including selection bias and the possibility that VF terminated before the presenting rhythm was recorded, these data do not support electrically induced VF as a common mechanism of these sudden deaths.